SEPTEMBER 1982 $5.00

BM/E

BROADCAST MANAGEMENT/ENGINEERING

THE SOURCE: BUYER'S GUIDE

10th ANNIVERSARY EDITION

AUDIO

VIDEO

LIGHTING

TRANSMITTING

TEST AND MEASUREMENT

COMPONENTS, HARDWARE

SERVICES

T W DENBROOK DIR OF ENG
KUOW RADIO
325 CMU-J OF WASHINGTON
SEATTLE WA 9819

www.americanradiohistory.com

Compact, clean and capable

It's hard to believe that so many outstanding features could be packaged in a compact, desk-top audio console. But we did it. The new ADM 1600 Series II sets new standards for versatility and capability.

This new console is available with up to 16 discrete inputs, 4 submaster and 2 master outputs. Along with a host of optional modules, the 1600 is perfectly matched to today's production and broadcast environments. And, like all ADM consoles, it is manufactured to the highest quality standards and backed by an exclusive 5-year warranty.

If you're thinking the best — think ADM.

Contact ADM Technology, Inc.

Home Office: 1626 E. Big Beaver Road
Troy, MI 48084
(313) 524-2100, TLX 23-1114

West Central Sales: (817) 467-2990

West Coast Sales: (415) 945-0181

East Coast Sales: (313) 524-2100

Rocky Mountain Sales: (801) 486-8822

ADM® 1600 SERIES II

The Audio Company

www.americanradiohistory.com

ADDA CORPORATION

ESP Digital Still Store System.

On-line previewing and editing; automatic sequencing; the instant creation of multi-layer graphics.

Today a concept we helped pioneer—the electronic storage and retrieval of video images for graphic production and preprogrammed on-air use—is becoming an industry standard for the technological leaders in television and video production.

Now we've put our years of experience into a new generation of still store systems. And from the 150C for mobile applications to the large, multiple drive 750C, our microprocessor-controlled, expandable systems have a production versatility that can't be beat.

With a price/performance ratio to match.

The Basic System.

Our ESP 750C Digital Graphics System consists of an Analog/Digital Processor, a Master Control Panel, and standard computer industry disk drives. But the built in flexibility of our system makes it easy to expand. Each Analog/Digital Processor can accommodate up to four drives. You can add up to a total of fifteen remote production panels. And more off-line storage with up to 99 separately identified disk packs.

Our dual channel output and front end synchronization allow you a choice of inputs and a wider range of capabilities.

And the 750's second generation digital electronics give you a production-oriented sequence and memory system that lets you perform last minute editing. Add or delete within a sequence. Create multiple generation graphics with virtually no degradation in the quality of your original image.

Smart Control.

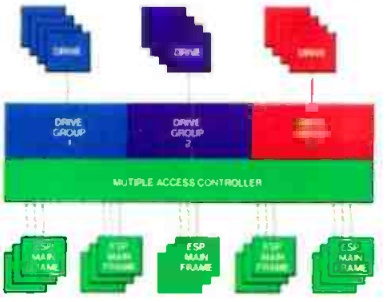
ESP's intelligent controls make the C Series a production tool that goes easy on everyone in your operation: Technical directors, graphic artists, and production staff alike.

Our standards include:

- A built-in operator prompter.
- Single function keys.
- A rapid-access sequence and memory system.
- Built-in safety features.

Great Optional Features.

The ADDA ESP C Series offers you some important optional features, too. Time-saving production tools like our Multipix "electronic storyboard." A Multiple Access Controller for simple modular expansion. A Digital Interface Board with programmable electronic interfaces that permits our system to be linked with station automation systems.



At ADDA Corporation, we pioneered the concept of economical, efficient, electronic graphics generation. And we think we're the best in the business. A lot of other people think so, too. Nearly 80% of the digital still store systems in use today are ours.

But don't take our word for it. Give us a call and let us show you what our years in this industry have produced.

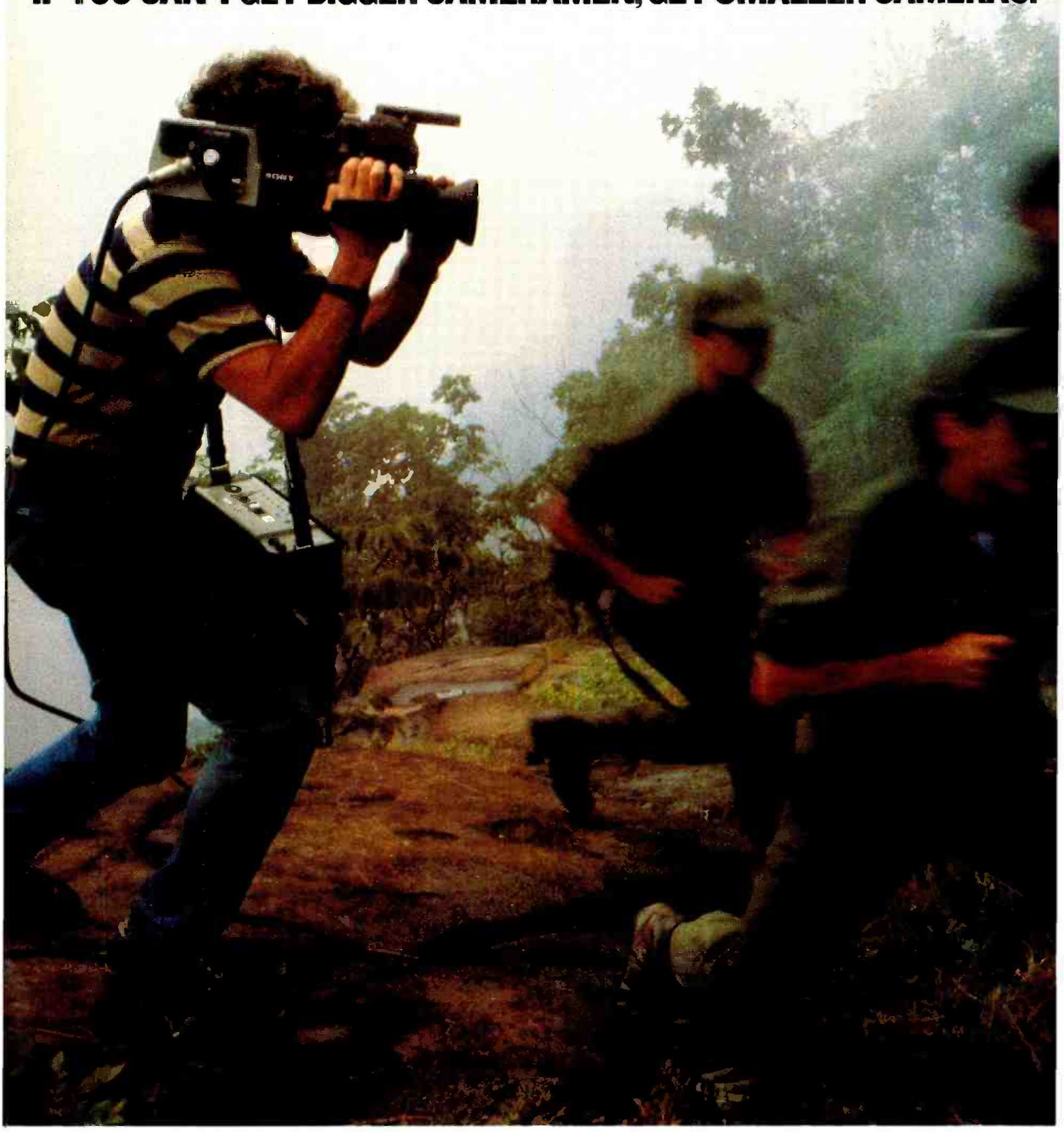
Affordable Excellence.

ADDA CORPORATION
1671 Dell Avenue
Campbell, California 95008
(408) 379-1500

Circle 100 on Reader Service Card

www.americanradiohistory.com

IF YOU CAN'T GET BIGGER CAMERAMEN, GET SMALLER CAMERAS.



If your cameramen don't mind packing 30 pounds on their shoulder, you can stop reading right now.

But if they're like most cameramen, mere mortals, they'd much prefer taking on the likes of El Salvador, Beirut or even downtown Topeka shouldering one-third the weight.

Which is precisely why Sony engineered the BVP-110.

Weighing in at just 9½ pounds and measuring only 14" x 3½" x 5", the BVP-110 is the industry's smallest, lightest, most compact full-fledged video camera. (In fact, it's so small, one network actually strapped it to a sky diver's helmet, while another fastened it to a snow skier traveling at 70 mph, with the results of both being super video.)

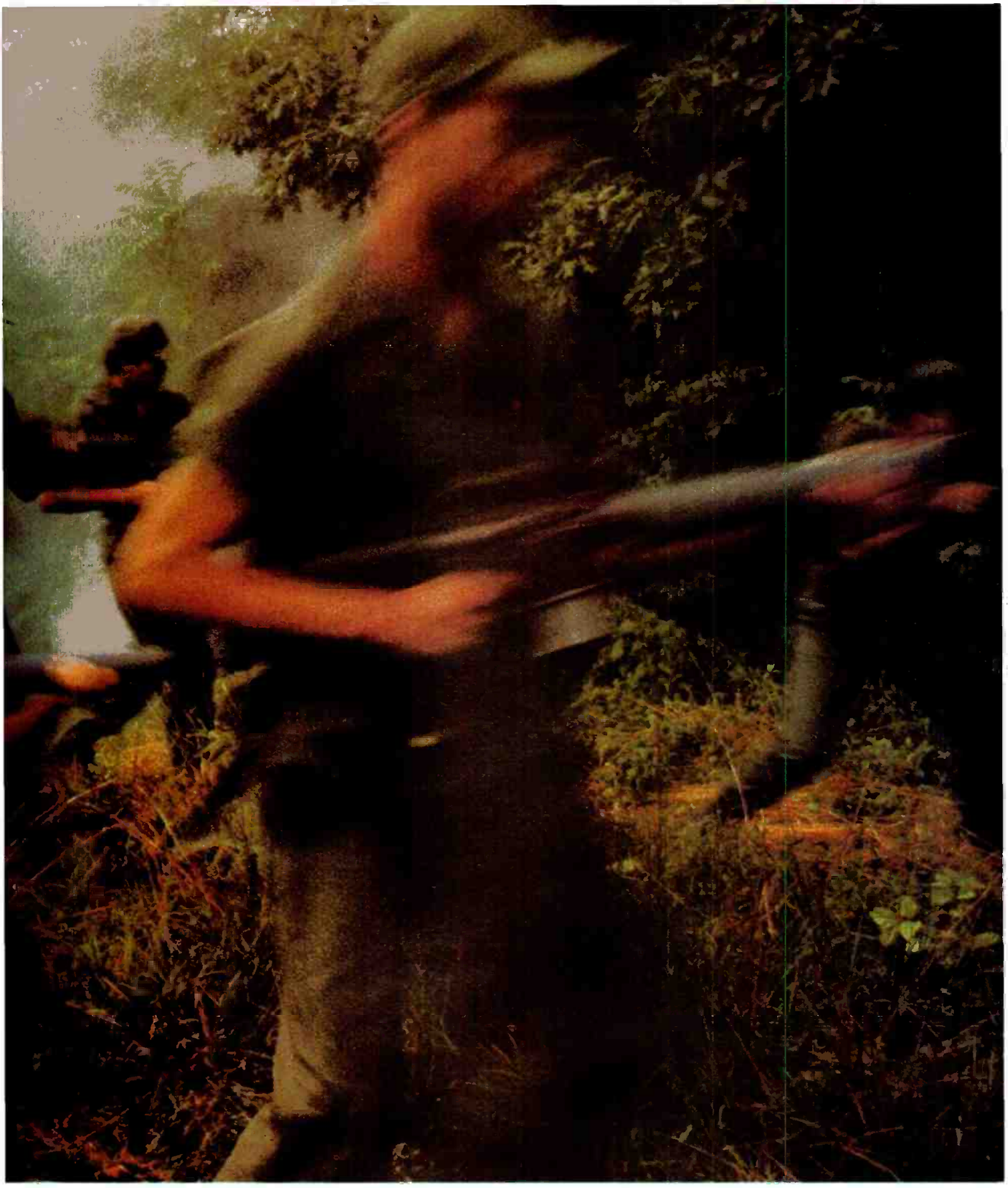
The Sony BVP-110 offers distinct advantages beyond compactness. Because it's a one-tube, you're free of the single most difficult and aggravating problem associated with three-tubes: registration error.

You're also free of color drift and black balance errors.

And the Sony one-tube frees you of something else—

Sony is a registered trademark of the Sony Corp. © 1982 Sony Corp. of America, 9 W. 57th St., New York, N.Y. 10019.

www.americanradiohistory.com



toting around loads of extra batteries. This rugged, dependable camera has the lowest power consumption of any broadcast-quality camera in the industry. It'll operate for more than two hours on a single battery pack.

So if you're looking to stay out in front of the news, instead of behind it, and you can't get bigger cameramen, get the next best thing. The Sony BVP-110.

Sony makes a complete line of cameras as well as ½", ¾" and 1" broadcast VTR's, editors, Digital Timebase Correctors, and high-performance monitors.

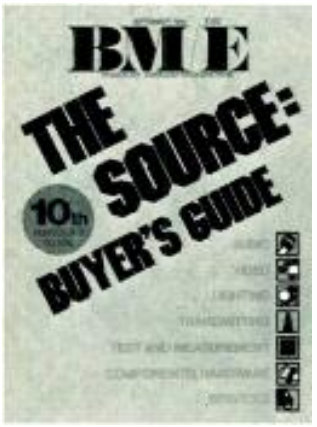
For more information, call Sony Broadcast Company, in New York/New Jersey at (201) 368-5085; in Chicago at (312) 860-7800; in Los Angeles at (213) 537-4300; in Atlanta at (404) 451-7671; or in Dallas at (214) 659-3600.

SONY
Broadcast

www.americanradiohistory.com

BM/E
BROADCAST MANAGEMENT/ENGINEERING

SEPTEMBER 1982/VOLUME 18/NUMBER 9

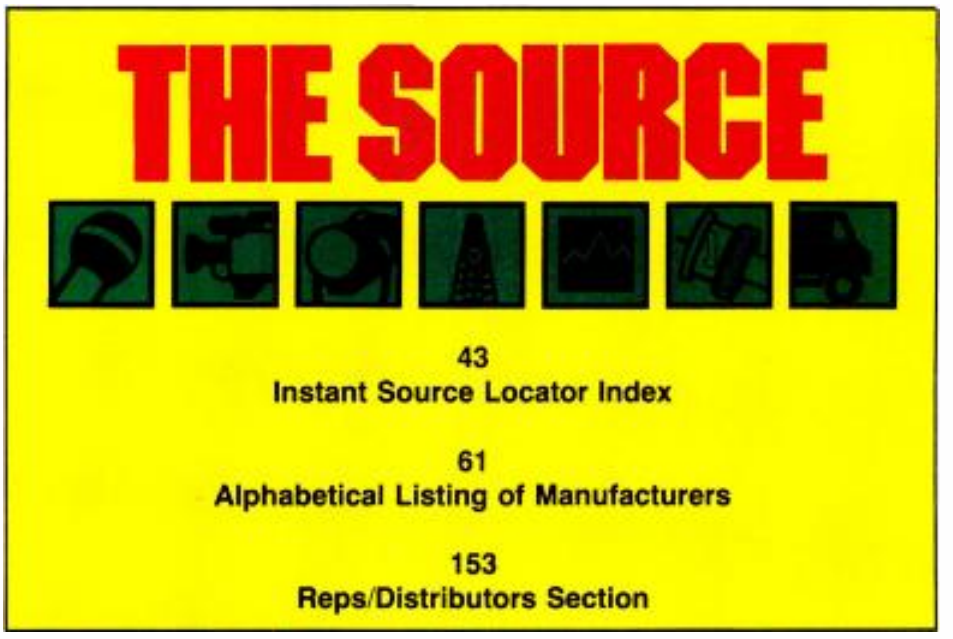


6 **Editorial**
Can benign neglect aid UHF?

10 **Broadcast Industry News**
Transponder sales OK, but still subject to veto; DBS licenses imminent, SSS enters DBS arena; FCC finds UHF healthy, seeks lower noise figure

25 **Radio Programming & Production**
WGN defies narrow audience orthodoxy

33 **Television Programming & Production**
Magazine shows seek production alternatives



199 **FCC Rules and Regulations**
DBS and the Fowler commission

205 **Tax Tips for Stations**
An overlooked tax credit

211 **Great Ideas Contest**
Enter next month's contest—win $50

219 **Broadcast Industry Products**
BM/E's survey of new products

Coming in October . . .
Special Report: Live Broadcasting, plus *full* SMPTE show preview.

The **NEW GREAT IDEA CONTEST** has **EVEN BIGGER PRIZES!** Details on p. 211.

Publisher
Charles C. Lenz, Jr.
Editorial Director
Gerald M. Walker
Editor Emeritus
James A. Lippke

Editor
Robert Rivlin
Senior Editor
Robin Lanier
Associate Editor
Eva J. Blinder
Assistant Editor
Tim E. Wetmore
Assistant to the Editor
Douglas Damoth
Editorial Production Assistant
Allene J. Roberts
Editorial Assistant
Toria Smith
Art Director
Saija Osis

Associate Publisher
Djuna Van Vort
Production Director
Janet E. Smith
Advertising Production Assistant
Charles Read
Circulation Manager
Robert Crawford
Reader Service
Sharon Porges

Comptroller
Michael J. Lanni

FCC Counsel
Farmer, Wells, McGuinn, Flood & Bechtel
Broadcast Financial Consultant
Mark E. Battersby
Special Projects Editor
C. Robert Paulson

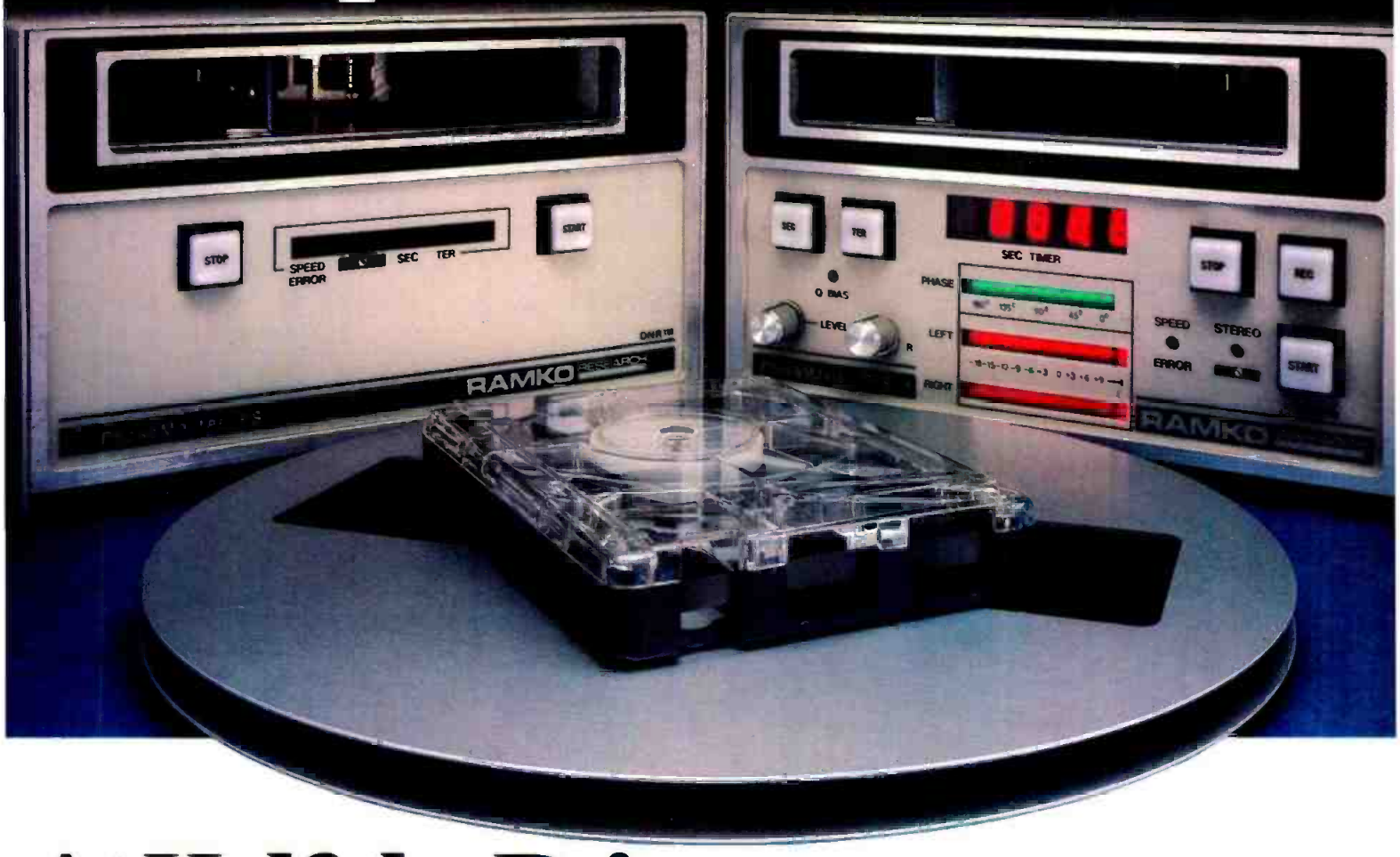
BROADBAND INFORMATION SERVICES, INC.
295 Madison Ave., New York, N.Y. 10017, 212-685-5320, Telex: 64-4001
Publishers: **BM/E—Broadcast Management Engineering**
BM/E's World Broadcast News

ABP MCC
BPA

BM/E BROADCAST MANAGEMENT ENGINEERING (ISSN 0005-3201) is published monthly by Broadband Information Services Inc. All notices pertaining to undeliverable mail or subscriptions should be addressed to 295 Madison Ave., New York, NY 10017. BM/E is circulated without charge to those responsible for station operation and for specifying and authorizing the purchase of equipment used in broadcast facilities in the U.S. and Canada. These facilities include AM, FM and TV broadcast stations, CATV systems, ETV stations, networks and studios, audio and video recording studios consultants, etc. Subscription prices to others $24.00 one year, $36.00 two years. Foreign $30.00 one year, $48.00 two years. Air Mail rates on request. Copyright 1982 by Broadband Information Services, Inc. New York City. Second class postage paid N.Y., N.Y. and additional mailing offices.

www.americanradiohistory.com

The Performance of an Open-Reel Recorder.



At Half the Price of Its Nearest Competitor.

Let's face it, the secret to better cart machine performance isn't in the cartridge, it's in the machine.

The new generation of improved cartridges and tapes alone can't solve the serious phase stability and noise problems. The plastic cart and its guiding system are highly imprecise, at best. The new "hot" tapes bring a slight decrease in audible noise, which is not terribly significant considering the noise base. The maintenance of precise machine-to-machine head phase alignment has been practically impossible in even the best installations.

The solution to the problem?

PhaseMaster. The industry's most advanced broadcast reproduction system. In the stereo units, our exclusive electronic solution utilizes variable delays in each of the output channels. A sample of the left program channel is encoded on the cue track (without interfering with the cue information), and upon decoding in the playback cycle is compared to its upper track (left program) mate. Thus, an apples-to-apples comparison which is used to correct for the time (phasing) differences due to head misalignment, tape skewing and jitter. It works flawlessly with any cartridge. It eliminates the compromise of unreliable and inconsistent electromechanical schemes; the tradeoffs imposed by noise-inducing and non-compatible matrixing approaches: the complex and inexact cross-correlation methods.

PhaseMaster gives you compatability with all your present, previously recorded carts too. An easy transition can be made at your own pace without having to immediately rerecord your station's entire library. Interestingly, even these carts will sound better due to our new noise-reduction circuitry.

Add to this the performance specifications that rival open-reel recorders and the best mechanical design you've ever seen in a cart machine.

Here's the best news yet: PhaseMaster can be performing in your studios for as little as $1,091.* At $2,600, our Stereo R/P is about half the price of the ITC/3M Series 99B. And the margin's even wider with Tomcat.** If you've given thought to adding the Phasechaser, you're now up to, or over the price of a new PhaseMaster with all of its inherent advantages.

Feature for feature, spec' to spec', dollar for dollar—the Phasemaster comes out on top.

The only way to fully appreciate a PhaseMaster is to get your hands (and ears) on one. To prove to yourself that PhaseMaster really has the performance of an open-reel recorder, that once and for all phase stability, noise and fidelity problems are a thing of the past, that there's a cart machine truly ready for FM & AM Mono or Stereo—write or call us now. We'll loan you a PhaseMaster at no obligation. Free, for two weeks.

Like we said, try it with anybody's cart.

You'll discover performance of an open-reel recorder, at half the price of its nearest competitor.

*Model PM-1 mono playback.
All prices are introductory and subject to change without notice.
**Based upon manufacturer's suggested professional prices 7/82.
ITC/3M, trademark 3M Corp. Tomcat, trademark of Pacific Recorders & Engineering. Phasechaser, trademark of Howe Audio, Inc.

PhaseMaster's Numbers

Wow & Flutter:	0.095% max. DIN weighted (0.04 to 0.07% typical)
Signal-To-Noise Ratio: (Playback)	−68dB. @ 160 nWb/m (A weighted) −72dB. @ 250 nWb/m (A weighted)
Frequency Response:	Amplifier: +0.25 dB (NAB Curve) System: 50 Hz to 16kHz ± 1.5 dB
Phase Correction: (Stereo)	±738° correction range @ 16kHz
Separation (Stereo):	50 dB
Output Level:	+25 dBm
Distortion:	0.3% max. (amplifier)
Price:	$1,091 Model PM-1 Mono Playback $2,600 Model RPS-1 Stereo—Record/Play $2,000 Model RPM-1 Mono Record/Play $1,399 Model PS-1 Stereo Playback

Engineered For Your Bottom Line.

RAMKO

Ramko Research, 11355-A Folsom Blvd.
Rancho Cordova, California 95670 (916) 635-3600

© 1982 Ramko Research

Circle 101 on Reader Service Card

www.americanradiohistory.com

EDITORIAL

Can Benign Neglect Aid UHF?

THE UN-REGULATION PHILOSOPHY applied by the FCC in recent actions concerning UHF television once again gives us cause for ambivalence. On the one hand, the Commission's statements sound encouraging to UHF and consistent with a desire to "get off the backs" of the industry. But on the other hand, we wonder if adhering to a philosophy that has gut-level popularity with broadcasters is in reality turning out to be a mixed blessing.

The Commission notes that the Us have become profitable and that in the 50 top markets almost all of the commercial channels are either occupied, under construction, or have applications pending. Profitability compares well with other broadcast media. Therefore, rules regarding UHF reception are adequate to the task of fostering UHF TV, the FCC says.

The FCC therefore declined to make any new rules in six areas involving receiver tuners and antennas. That is good news for the receiver makers who have generally resisted previous FCC requirements aimed at providing UHF comparability. But what about the UHF TV broadcasters?

Comparable profitability is certainly in the eye of the beholder. The percentage of UHF stations reporting profits compares well with *radio*—not with VHF stations. UHF stations reporting profits have consistently exceeded the percentage of FM stations since 1971. Since the mid-1970s the percentage of UHF stations in the black has equalled or exceeded the proportion of AM stations. The only exception was in 1980 when all three services were virtually equal with 58 percent of UHF TV stations profitable, 59 percent of AM stations, and 55 percent of FM stations.

None of the three has approached the percentage of profit-making VHF stations. Figures for the Vs are awesome—from 81 percent in 1971 to a high of 92 percent in 1977 and 1978 and back to a still-astronomical 88 percent in 1980.

That is not exactly comparable. The FCC's UHF Comparability Task Force has come up with a way out, however. Exact equality between UHF and VHF is not needed to achieve a diverse and competitive UHF service, the task force reports. VHF probably will remain superior because of the propagation characteristics of UHF which would require greater power for equivalent coverage and would entail much higher operating costs, the group adds.

A UHF service should be judged on its own merits, the task force concludes. In other words, there is no parity financially or technically. Therefore, it may be premature to decide that the future of UHF depends entirely on the marketplace.

The Commissioners seemed to be saying as much when they took up the issue of weak signal performance. Apparently against the recommendations of the Office of Plans and Policy, five commissioners voted to instruct the FCC staff to draft a Notice of Proposed Rulemaking that would reimpose a limit of 12 decibels on the UHF "noise figure," as a measure of a TV receiver's performance in weak signal areas. This proposal would reinstate a regulation vacated by the U.S. Court of Appeals for the District of Columbia Circuit when the FCC sought to change the noise figure in 1982 model TV sets from 14 dB to 12 dB.

If there is any message among these mixed signals it seems to be that the regulators have to be ready to separate the marketplace theory from issues, usually technical, that cannot be handled by the marketplace. Otherwise the theory may become a means of avoiding controversial problems.

www.americanradiohistory.com

Harrison TV-3

STEREO TELEVISION CONSOLE

TV-3 is the only television audio console that provides production facilities and signal-performance specifications which match your high standards of video production. It incorporates virtually every function and feature requested by a wide range of surveyed teleproduction clients.

Eight stereo groups, a versatile separate multitrack-interface section, VCA input grouping, and automation make TV-3 the perfect console for all audio production, post-production, and master control applications.

If your sound goes with pictures, we have what you need.

HARRISON SYSTEMS, INC./P.O. Box 22964, Nashville, Tennessee 37202/(615) 834-1184, Telex 555133

Circle 102 on Reader Service Card

www.americanradiohistory.com

If you're ready to move up to a specialized mixer, you're ready for Ramsa.

The Sound Reinforcement Specialist: Ramsa WR-8716

When your sound says you're professional but your mixer doesn't. When you're wasting your subtlety and style on "make-do" boards. When you're creating compromises instead of clear-cut distinctions. Then you're ready for Ramsa—the mixers that are specialized so you won't have to compromise.

The WR-8716 is a fully modular sound reinforcement console with 16 input modules, 4 group modules, and 2 masters. It features 16 input pre-fader solo buttons. 4 group modules with pre-fader insertion patch points. and lockable post-fader solo buttons. There are 6 illuminated VU meters with peak LED's for easy outdoor reading and a separate stereo variable frequency EQ for monitor sends. Pan pot controls allow panning to the left or right masters while level controls permit 16 x 6 board operation. The left and right direct channel assign function lets you bypass the group modules for individual sources. Portable operation is a snap with easy access connectors.

And the WR-8716 features plastic conductive faders for greater reliability and smooth, low-noise operation: external power supply for light weight. and switchable 48V DC phantom power for condenser mics.

www.americanradiohistory.com

RAMSA

The Recording Specialist: Ramsa WR-8816

The WR-8816 recording console includes the same modular construction, input modules, power supplies, and faders as the WR-8716 plus many important recording advantages. Like direct outputs for 4, 8, or 16 track recording and peak-reading LED meters that let you monitor any 4 out of 24 signals with clear, quick response.

You'll command a variable frequency EQ section with 3 frequency settings for the high and low frequencies plus continuously variable midrange. Stereo echo send replaces the separate mono controls you'll find on competitive boards. And you get two independent stereo monitor controls—one for musician's headphones, one for control room monitors—a special feature for any mixer in this class. And there are other important features like low noise electronically balanced mic inputs with high-speed IC's, 16 switchable post-fader solo controls and XLR-type mic connectors.

Ramsa offers a full line of specialty mixers including the more compact WR-8210 recording mixer and WR-130 sound reinforcement mixer. So don't hold down your professional sound, call (201) 348-7470, because you're ready for Ramsa.

Circle 103 on Reader Service Card

Panasonic®
PROFESSIONAL AUDIO DIVISION

www.americanradiohistory.com

Transponder Sales OK, But Still Subject to Veto

Outright sale of transponders by satellite carriers has been given the official FCC seal of approval. In a six-to-one vote (with Joseph Fogarty dissenting), the commissioners granted requests by several of the major satellite companies that they be allowed this alternative to first-come, first-served transponder leasing.

At the same time, the FCC went out of its way to emphasize that it would review each request for non-common-carrier status on a case-by-case basis. The Commission accepted the view of its Common Carrier Bureau that "any shortage [of transponder space] is in its final stages," as spokesperson Robert Mazer put it. Nevertheless, it yielded to the urging of Commissioner Abbott Washburn in insisting that it would closely monitor the satellite market to insure that it remained competitive.

Dissenter Fogarty expressed dissatisfaction with the majority view, asserting that transponder space "continues to be a scarce commodity" and arguing that the Commission was abdicating its public interest responsibilities by leaving transponder sales to the marketplace. Commissioner Anne Jones, while concurring in the decision, also expressed some concern that the Commission could be sidestepping its duties.

Simultaneously with issuing the decision, the FCC authorized several carriers to sell transponders on their birds. They were: RCA Americom (five transponders on Satcom 4); Western Union (Westar 4 and 5); and Hughes Communications (Galaxy 1 and 2).

DBS Licenses Imminent; SSS Enters DBS Arena

FCC authorization of construction permits for interim direct broadcast satellite operators was widely expected to take place before September 1. CPs will be issued to applicants in the order they applied for the service, observers believe. This puts Comsat's subsidiary, Satellite Television Corp., first on the list for consideration, followed by RCA, DBS Corp., CBS, U.S. Satellite Broadcasting (a subsidiary of Hubbard Broadcasting), Western Union, Graphic Scanning Corp., and Video Satellite Systems.

Meanwhile, Satellite Syndicated Systems has thrown its hat into the DBS ring, asking FCC authorization for a five-satellite system that would offer four channels of pay programming. SSS's plan calls for bringing cable companies in, either as full equity partners or in a joint venture. The move comes too late to be considered with the first round of applicants, however, and it appears likely the FCC will not consider the SSS application until after next year's RARC.

Comsat, once it has its CP in hand, is expected to grant RCA Astro-Electronics the contract for construction of two satellites. The system could be launched as early as 1985. RCA Americom, predicted by some to become the second working DBS operator, could be in orbit by late 1986 or early 1987.

FCC Finds UHF Healthy; Seeks Lower Noise Figure

UHF television, while not directly comparable to its VHF counterpart, is a healthy, viable medium that can thrive under present regulations. So determined the FCC in its latest look at UHF, embodied in a recent policy statement (see Editorial, p. 6).

The statement asserted that, except for some "fine-tuning," the current UHF rules are sufficient to insure continued growth. It noted that UHF's profitability is comparable to that of AM and FM radio, although lower than the figures for VHF, and that no UHF station has gone off the air for good since 1976.

The most important factor in increasing the reception quality of UHF is the viewers' choice of receiving antennas, the Commission claimed, arguing that further regulation of receivers or signal transmission would have little effect.

In addition to issuing the policy statement, the FCC took several actions. It declined to propose a system of grading or labeling TV receivers and antennas; decided against a biennial program of measuring receiving antennas, but authorized the Office of Public Affairs to conduct an information program; dropped proposals for an integrated UHF-VHF channel selector; and eliminated the requirement that TV sets be able to receive channels 70-83, now allocated to the land mobile service.

In addition, the Commission dropped a suggested requirement for greater channel capacity on pushbutton-type channel selectors and decided not to pursue a recommendation for rules requiring equality between reception aids provided for VHF and UHF.

The Commission overruled the objections of Chairman Mark Fowler in instructing the staff to draft a notice of proposed rulemaking to reimpose a UHF noise figure limit of 12 dB. The 12 dB figure originally had been de-

Fritts to Head NAB; Assumes Presidency October 1

The Joint Board of Directors of the NAB, acting at a special August 9 meeting, elected Edward O. Fritts the next president of the association. Fritts succeeds longtime NAB leader Vincent Wasilewski, who is retiring to become a partner in the Washington law firm of Dow, Lohnes & Albertson.

Just a few weeks before the election, Fritts stepped down temporarily from his post as chairman of the Joint Board to become a candidate. His move generated controversy, especially since he had also headed the special search committee seeking to replace Wasilewski. After Fritts's departure, however, the committee surprised many observers—and itself, it was reported—by voting to nominate a single candidate for the NAB presidency. The man it picked was Donald A. Thurston, former Joint Board chairman and president of Berkshire Broadcasting Co. of North Adams, MA.

The winner: Eddie Fritts.

The nomination failed to assure Thurston's election, however, and Fritts will begin his tenure as NAB president October 1. Fritts is president of the family business, Fritts Broadcasting, Inc., of Indianola, MS, which owns radio stations in Mississippi, Louisiana, and Arkansas; he and his father, Edward B. Fritts, jointly own WPAD and WDDJ, Paducah, KY.

www.americanradiohistory.com

TEK 690SR
COLOR PICTURE MONITOR

There are some products by which all others are judged.

Tektronix introduces a new standard of reference for judging color picture quality. And color picture monitors. Look at the 690SR for an accurate, honest picture, every time. High resolution, precise convergence and stable color make it your best basis for subjective picture evaluation. You're not looking for retakes. That's why you should be looking at the 690SR for the correct rendition of your input signal.

Engineered to be best. A true high resolution tube offers a sharp, accurate image. Superior for both subjective picture evaluation and camera registration analysis.

Set-up is simplified, with logical, noninteractive convergence controls. And maintenance needs are minimal. Modular design makes troubleshooting simple.

Judge for yourself. The 690SR is built in the Tektronix tradition of commitment to excellence. And backed by a worldwide service network and proven technical support.

Let a Tektronix Sales Engineer show you. Call our nearest Field Office (listed in major city directories) or call toll-free, 800-547-6711. (In Oregon, 800-452-6773.)

Tektronix, Inc.
P.O. Box 4828
Portland, Oregon
97208

(Actual Display)

Tektronix
COMMITTED TO EXCELLENCE

Circle 104 on Reader Service Card for Literature

www.americanradiohistory.com

clared in 1980, but was vacated by court action. The current limit of 14 dB will be retained during the proceeding.

Panel Reports on Funding for PBS; FCC Eyes STV

Taking its cue from the initial report to Congress of the Temporary Commission on Alternative Financing for Public Telecommunications, the FCC has issued a rulemaking that seeks to allow public broadcasters to raise funds through subscription television operations.

STV for noncommercial TV operators was just one of the recommendations of the Temporary Commission, created by Congress last year and chaired by FCC Commissioner James H. Quello. The panel also urged the Commission to authorize public radio stations to offer commercial, nonbroadcast SCA subchannel services; to examine its restrictions on commercial use of public radio and TV licensees' satellite facilities; to work at resolving UHF comparability problems; to allow public TV stations to offer teletext services with no restrictions on payment mechanisms; to maintain sufficient instructional TV fixed service channels for public broadcasters; and to review its policies on on-air fundraising and promotional identification.

The Temporary Commission declared that no reasonable short-term alternative to federal financing existed for public broadcasting, and that even over the long term, federal funding was the preferred method of maintaining the system. Serious reductions in the level of government support would lead to reductions in service, the group stated. In that spirit, it encouraged Congress to continue adequate funding for the public broadcasting system, to study repeal of the unrelated business income refund provisions of the Public Broadcasting Amendments Act of 1981, and to increase tax incentives for individual and corporate contributions.

The panel itself plans to study the possibility of a special trust fund for public broadcasting and to analyze and report on the current PTV advertising experiment (see *BM/E*, March 1982, p. 15).

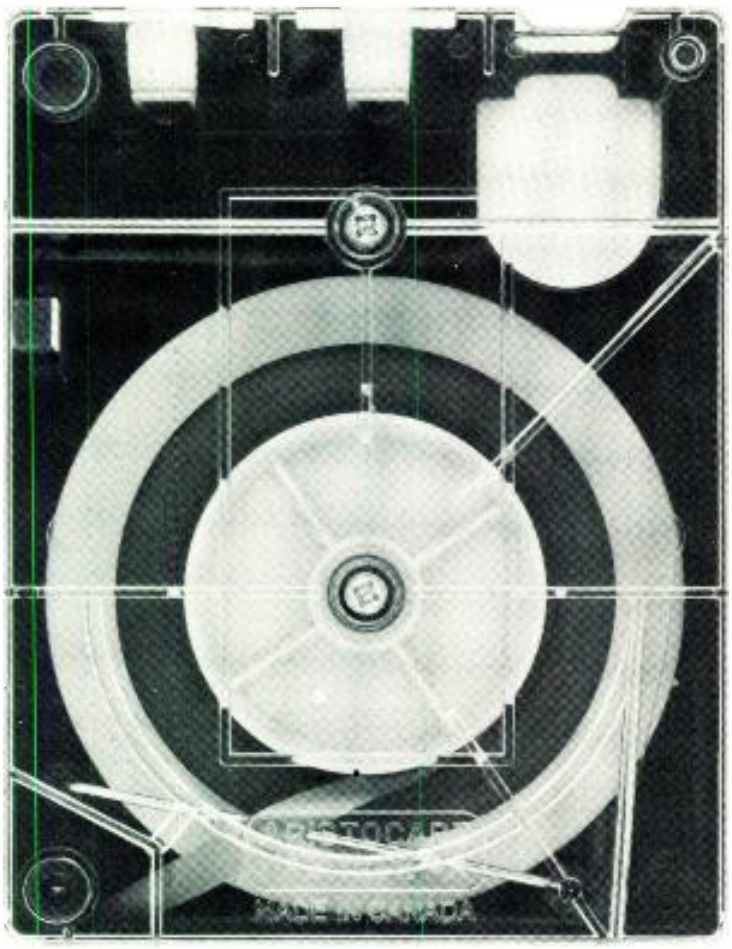
The STV rulemaking outlined several possible structures for subscription operations. The suggested alternatives were: unlimited STV with no functional restrictions; functional restrictions on STV offerings (allowing, for example, only instructional programs); time limitations; or allowing STV full-time on one public channel in a market with two or more. In this last scenario, revenues from the STV operation would provide funds for conventional noncommercial programming on the other station(s).

In issuing the rulemaking, the FCC noted that the Omnibus Reconciliation Act of 1981 may, in fact, outlaw public STV operations. The act, while allowing public stations to seek payment for "services, facilities, or products," specifically states that such activities must not interfere with the stations' public offerings.

The Commission also asked the public to comment on whether STV was in line with public broadcasting's noncommercial nature.

Meanwhile, public broadcasting continues its search for financial viability. A recent victory was Congress's restoration of $24.4 million that had been cut from the Corporation for Public Broadcasting's 1984 budget; the total appropriation now stands at $130 million. In addition, the FCC has ruled that public stations are free to air paid promotional announcements for nonprofit groups.

Looking to the private sector, National Public Radio recently announced



ARISTOCART

no other NAB cartridge meets these exacting standards

We designed the ARISTOCART cartridge 10 years ago. Its features have been widely copied but it continues to outperform competing products because we alone take the trouble to check each unit we ship for phase stability and frequency response in conformity with NAB specifications.

our guarantee

If any ARISTOCART cartridge should fail to meet NAB AM/FM performance specifications on a properly aligned cart machine, we will replace it at our sole expense.

MANUFACTURED BY ARISTOCART DIV. WESTERN BROADCASTING LTD., 505 BURRARD ST., VANCOUVER, B.C., CANADA V7X 1M6 TEL: (604) 687-2844 TELEX: 04-54639

Circle 106 on Reader Service Card

www.americanradiohistory.com

FROM OUR HANDS TO YOUR HANDS

The Otari ½" Four Channel MARK III/4 & ½" Eight Channel MARK III/8

At Otari, the focus of our work is on innovation and problem solving. These values are carefully reinforced by our dedication to quality: they are inherent in every tape recorder we engineer.

The new MARKIII/4, 1/2" four channel production recorder and its companion eight channel version are the embodiment of this philosophy.

Both compact recorders are designed with microprocessor circuitry for smooth, responsive transport control and precise electronic counting with an L.E.D. display. True, three head design, selectable +4 or −10dBm input and output levels, 15/7.5 ips with continuously variable speed control, 10-1/2" reel capacity, cue control, and dump edit deliver flexibility that makes your production work move faster. Both models feature selectable headphone monitoring for all channels, a multiple frequency test oscillator and positive-locking NAB reel hub adapters. To achieve every last dB of performance, you won't find a competitive machine that lets you get your hands on a full complement of adjustments as easily.

Add to all this, mastering quality sound and the specs that guarantee it. And, the ability to interface to SMPTE time code synchronizers.

Built with the reliability and craftsmanship that have become the hallmark of our reputation with our 5050 Series two channel machines, we've once again advanced the broadcast industry's most advanced and affordable professional recorders.

From our hands to yours, the new MARKIII/4 and its companion, the MARKIII/8 are engineered like no other tape machines in the world; with qualities you can hear and feel.

OTARI *Technology You Can Touch.*

Otari Corporation. 2 Davis Drive, Belmont, CA 94002
Tel: (415) 592-8311 Telex: 910-376-4890

Circle 107 on Reader Service Card

www.americanradiohistory.com

it had joined with Mobile Communications Corp. of America to form National Satellite Paging, Inc., which will offer a comprehensive satellite-interconnected paging system to individuals and businesses. Some of the revenues from the new company will help public radio stations meet the current budget crisis. The Public Broadcasting Service's fundraising ventures have also borne fruit: over the past year, the group has raised $4 million from private sources. In addition, it said, it has agreed to sublease a satellite transponder to Bonneville Satellite Corp. for $1 million.

Kahn AM Stereo System First to Hit Airwaves

Kahn Communications scored the first point in the AM stereo competition when two stations, KDKA, Pittsburgh, and KTSA, San Antonio, went on-air almost simultaneously with the Kahn system. Veteran KDKA, an NBC affiliate, will air its MOR format in stereo intermittently; KTSA's top 40 programming went to full-time stereo right away.

Quickly joining the two premier stations were KHJ, Los Angeles; KFRC, San Francisco; KMBZ, Kansas City, MO; WLS, Chicago; and WMAL, Washington. All had previously installed the Kahn exciter and went on-air in stereo shortly after the FCC announced type-acceptance of the equipment.

At press time Harris Corp., the other strong contender in what started out as a five-way contest, was awaiting type acceptance for its own AM stereo system. The company said that as many as 15 stations were ready to go on-air with the Harris AM stereo system, with WQXI, Atlanta, scheduled to be the first. More than 100 AM stations have ordered Harris AM stereo equipment, according to the company.

Several other stations, including WBZ, Boston; WOWO, Fort Wayne, IN; WOW, Omaha; WFIL, Philadelphia; KSL, Salt Lake City; and WNBC, New York, were also lined up to begin broadcasts with the Kahn stereo exciter.

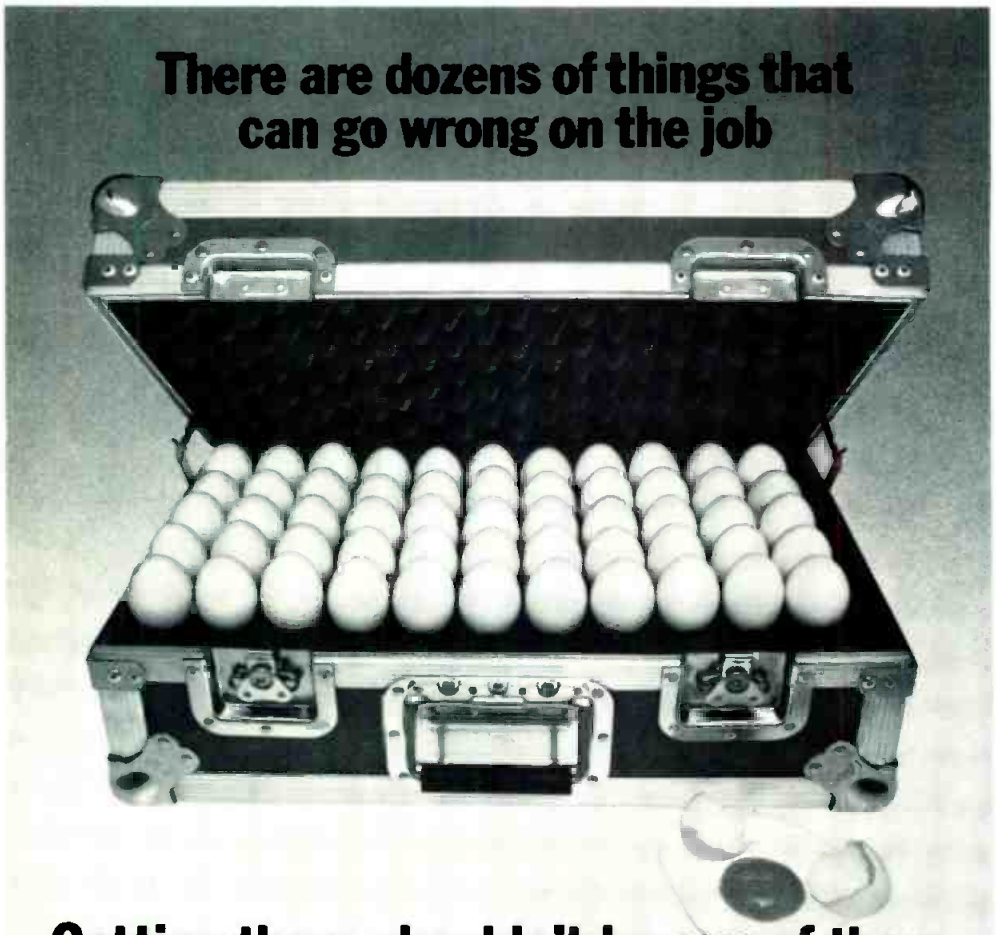
One problem remains for all the AM stereo pioneers—no AM stereo receivers are presently available. A short-term solution may be adapters to convert AM/FM stereo receivers to AM stereo/FM stereo operation. Such adapters are expected to be available soon for both Kahn and Harris systems. In addition, Kahn is expecting Mura Corp. of Westbury, NY, to begin manufacturing portable AM stereo receivers for its system when semiconductor chips become available.

Cable Crossownership Rules Unnecessary: FCC

Claiming that program diversity is in no danger, the FCC has proposed deletion of 1970 rules prohibiting common ownership of cable television systems and broadcast networks.

The notice of proposed rulemaking followed a study by the FCC's Office of Plans and Policy that concluded that the present rules block possible benefits that could arise from such crossownership, such as increased efficiency and lowered costs. Current realities, the OPP study concluded, do not support the original reasons for the rules.

The crossownership prohibition was enacted originally to insure program diversity (thought to be threatened by common ownership of networks and cable systems) and to promote the development of new cable networks, which, it was thought, could be hindered if the powerful networks got into the act.



Getting there shouldn't be one of them

Even though all "flight cases" may look similar, there are real differences between them.

Calzone Escort cases are designed to protect expensive and delicate equipment from the most punishing travel conditions. Our patented *Double-Angle* construction provides ultimate strength and protection for rack-mounted equipment, mixing boards, lighting, speakers, cameras, VTR's, cables or anything that must endure the torture of heavy travel. Our cases are already being used by many of today's production companies, sound contractors and radio/television crews whose living depends on getting their gear to the job in perfect working order.

Calzone also makes tough Convoy road cases for short hauls. We make dozens of different models to fit most any kind of job or equipment. Or, we can custom-build virtually any type of case in a hurry. When your sophisticated equipment requires high-tech protection, Calzone handles with care.

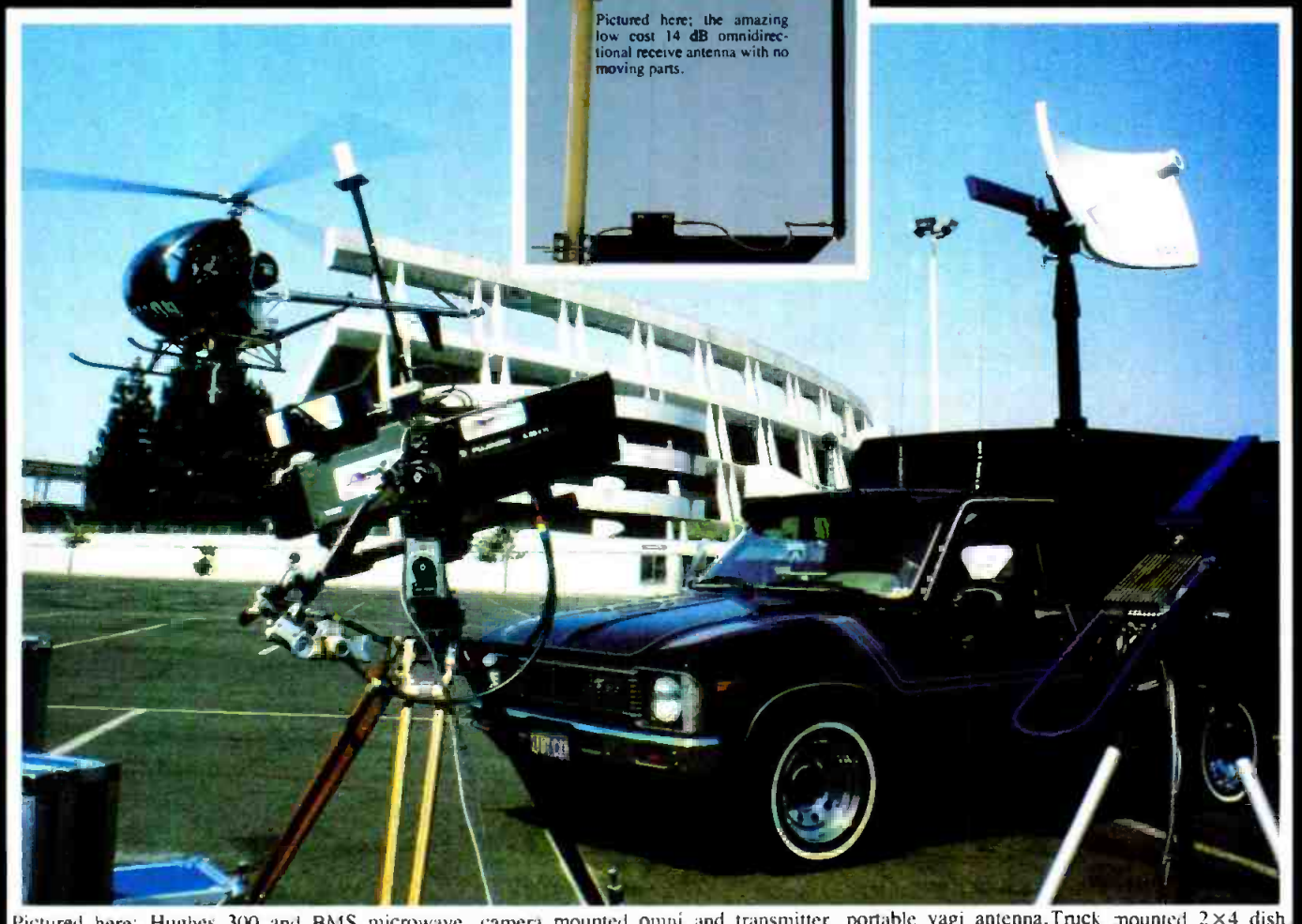
CALZONE Case Co

P.O. Box 862, So. Norwalk, CT 06856 1-800-243-5152

Circle 108 on Reader Service Card

www.americanradiohistory.com

The News & Sports Microwave People



Pictured here; Hughes 300 and BMS microwave, camera mounted omni and transmitter, portable yagi antenna.Truck mounted 2×4 dish.

Broadcast Microwave Services offers television broadcasters innovative ENG microwave equipment that allows you live dependible coverage at low cost.

Complete Helicopter Microwave Relay Systems
2 pound frequency agile transmitter allows versatility customized to market with up to 100 miles range.

News Truck and Car Microwave Equipment
Hi-performance antennas combined with rack mount transmitters, receivers and portable models gets your live broadcasting quickly and efficiently on the air.

Inter-City Point to Point Microwave Transmission
Innovative unmanned sites with excellent antenna systems to provide the utmost reliability.

BMS, The News & Sports Microwave People
We specialize in ENG microwave equipment and provide the best quality and service to the broadcasting industry. Call BMS for your microwave needs.

BMS Broadcast Microwave Services, Inc.

7320 Convoy Court, San Diego, CA 92111 Phone [714] 560-8601 TWX No. 9103351662

Circle 109 on Reader Service Card

www.americanradiohistory.com

Since that time, the Commission noted, the entry of new video delivery systems, such as STV and MDS, has increased the competitiveness of the video marketplace, making the cross-ownership restrictions less vital. The Commission also concluded that network dominance of the cable industry was unlikely for several reasons, including the large number of already established cable networks. Network entry into CATV would be more likely to increase competition than to decrease it, the Commission said.

Commissioner Mimi Dawson, while concurring in the action, expressed some concern that there was no clear framework for determining when a single system owner's concentration had become excessive. In a separate statement issued with the rulemaking, she asked for comment on several issues related to this.

Multiple ownership rules for cable came under FCC scrutiny just a few days after its crossownership rulemaking. At that time, the Commission decided against adopting any multiple ownership rules for the CATV industry, claiming that present there is no threat to diversity from overconcentration of ownership, and that system operators and subscribers should be permitted to realize the benefits of multiple system ownership.

FCC Initiates Inquiry on Equal Time Requirements

A reinterpretation of the Communications Act requirement that broadcasters provide equal opportunities for political candidates has been proposed by the FCC, which has asked for comment on several suggestions.

Currently, a political debate is exempted from the equal time rules only if it is arranged and sponsored by a nonbroadcast party, broadcast in its entirety either live or no later than the day following the event, and covered because of its newsworthy nature. The FCC requested comment on allowing broadcaster-sponsored debates between legally qualified candidates to be considered "on-the-spot coverage of bona fide news events" and therefore exempt from the equal time restrictions.

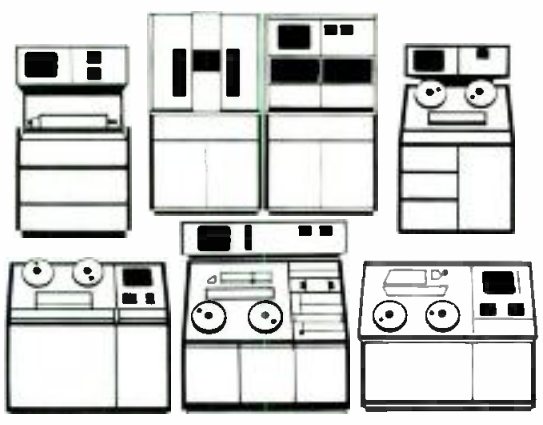
In addition, the Commission asked whether the time limitation should be lifted to exempt broadcasts later than the day after the event from the rules. The Commission also asked commenters if it should establish a new time period or rely instead on a good faith standard.

Comments were also requested on the interpretation of the "bona fide news documentary" exemption, which exempts such documentaries if the appearance of the candidate is incidental to the show's topic.

Hawaii

Our story on the NATPE Iris Awards (*BM/E*, May 1982, p. 29) announced that this was the first year Honolulu stations had won the award—both KITV and KGMB. John A. Wray, associate program director at KGMB, writes, however, that his station first won the award three years ago for his production of "Homegrown III," whose concept was expanded into the 1982 award-winner "Homegrown IV" (small market/entertainment category).

"That particular program and the 1979 award marked the beginning of some genuine trailblazing in local production here in Hawaii," continues Wray. "Now all commercial stations have greatly expanded their interest and production capabilities. In fact, the viewing public here in the Islands can't get enough local production, whether sports, documentaries, or specials."



Making the best better!

Merlin Quality Quad Refurbishing:

Most of the thousands of quad VTRs made since 1956 are still operational . . . many performing better than new. Thanks to Merlin Engineering.

We're dedicated to rebuilding and refitting quad VTRs . . . no matter what the vintage. Each machine receives individual attention according to customer requirements, but three basic services are available:

Standard Rebuilding Thorough overhaul and parts replacement to return the VTR to original operational condition.

ULTRAFURBISH Complete upgrading of the machine to state-of-the-art performance with the addition of a complete digital time base correction package.

Custom Engineering Development of system design and ancillary equipment to adapt the VTR to specific user requirements.

Customer machine may be refurbished, or in many cases, exchanged to eliminate down time.

MERLIN

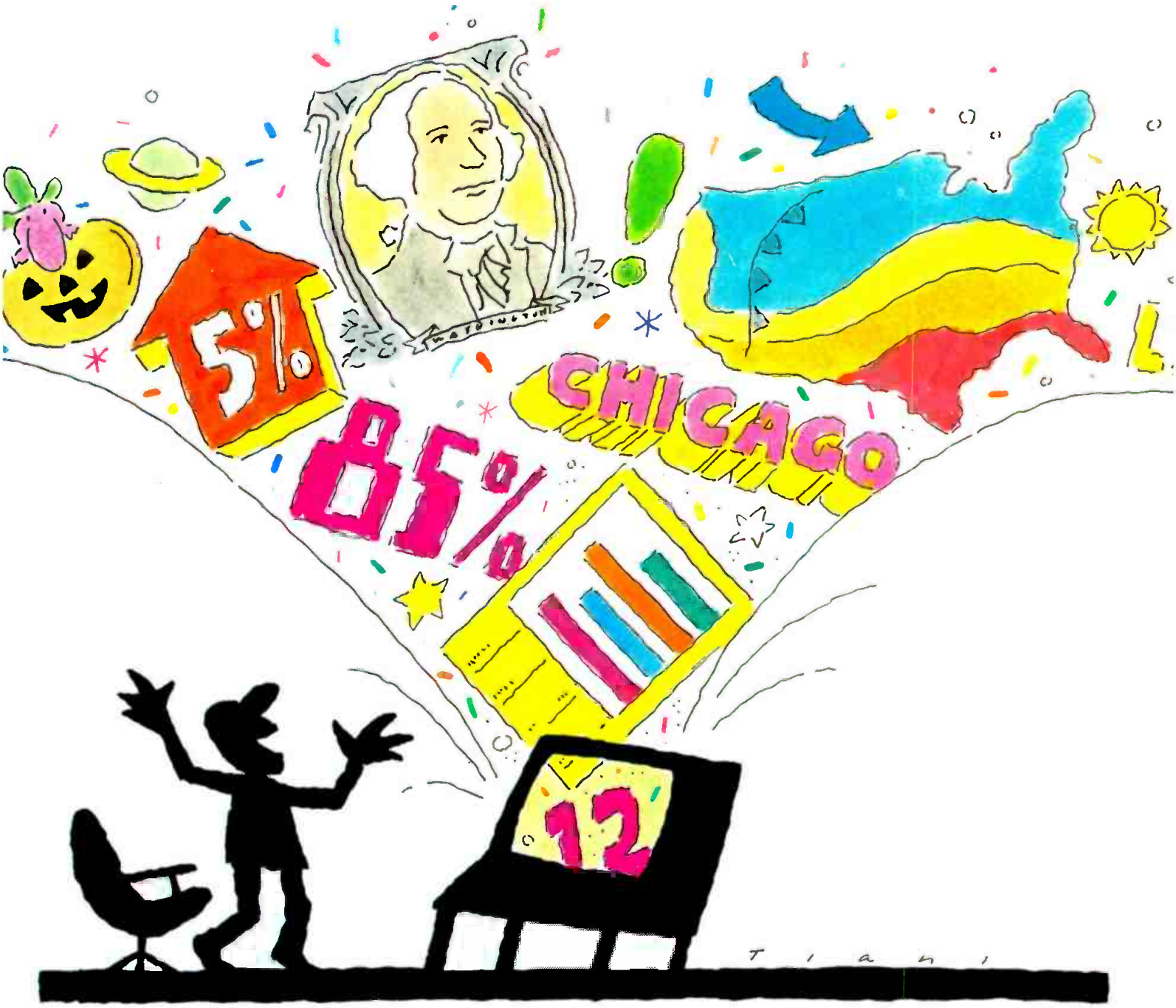
1880 Embarcadero, Palo Alto, CA 94303
Call Toll Free — 800-227-1980 (California — Call Collect 415-856-0900)

Circle 110 on Reader Service Card

www.americanradiohistory.com

Ultranimation

Ordinary words can't describe the Dubner CBG-2 Video Graphics Generator



Every now and then a product comes along that so outclasses existing products, claims like "revolutionary" and "breakthrough" seem inadequate.

Such is the case with the Dubner CBG-2 Video Graphics Generator, a *computerized character generator* that's also a painting system, frame storage device and video effects generator.

But the real miracle of the Dubner CBG-2 is more than just versatility. It's the ease, sophistication and speed with which it can create everything from a weather map to a tricky network logo animation sequence.

In fact, the Dubner CBG-2 Character/Graphics/Weather/Animation Generator offers such diversification, it's impossible to describe in just one word. And the amazing price is indescribable too.

Find out more today. For immediate information call (201) 592-6500.

DUBNER COMPUTER SYSTEMS INC.

Dubner Computer Systems, Inc., 158 Linwood Plaza, Fort Lee, New Jersey 07024

Circle 111 on Reader Service Card

www.americanradiohistory.com

CBS, Inc., has requested permission to establish **over-the-air MDS services** in each of the five markets in which it owns television stations. The four- to eight-channel systems, if approved, would continue CBS's march into the new technologies . . . . The FCC has cleared the way for ABC-TV to offer its Home View Network, a scrambled, over-the-air **late-night movie service** aimed at viewers with VCRs.

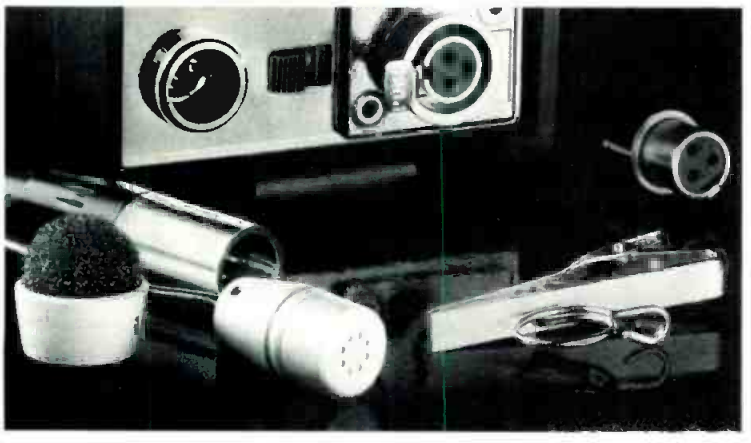
Broadcasters, led by Palmer Communications, continued their **opposition to Radio Marti** in recent hearings before the Senate Foreign Relations Committee, considering authorizing the service under S. 1853. Palmer is licensee of WHO, Des Moines, which operates on the 1040 kHz frequency proposed for Radio Marti and fears severe interference from Cuba as retalia tion. The House Committee on Energy and Commerce had previously approved its Radio Marti authorization bill, H.R. 5427 . . . . A controversial amendment to a Senate tax bill would grant an automatic **five-year license renewal** to any commercial VHF station willing to move to a VHF-less state (i.e., New Jersey or Delaware). House Communications Subcommittee chairman Timothy E. Wirth (D-CO) is a staunch opponent of the measure . . . . The Senate has approved a measure to **reduce the FCC** to five commissioners from the current seven.

While **radio station profits rose** in 1981, profit margins dropped from 4.13 percent to 3.46 percent, according to an NAB survey. Gross time sales and net revenues rose an average of 19.9 percent and 21.5 percent, respectively, for the 1700 AM and FM survey respondents . . . . Ziff Corp. has agreed to sell its four remaining TV stations to I. Martin Pompadur, who resigned as the company's president. The stations are **WRDW-TV**, Augusta, GA; **WEYI-TV**, Saginaw, MI; **WROC-TV**, Rochester, NY; and **WTOV-TV**, Steubenville, OH . . . . Outlet Co. has completed its sale of **WDBO-AM/FM**, Orlando, FL, to Katz Broadcasting of Florida, Inc., subsidiary of Katz Communications. Sale price was $9.5 million.

Turner Broadcasting's CNN2 headline service has reported **76 broadcast station affiliates,** including WFLD-TV, Chicago. WRNG Radio of Atlanta has taken the call letters **WCNN** after going all-news as a CNNRadio affiliate . . . . **KPRZ-AM**, Los Angeles, has joined the Mutual Broadcasting System as primary affiliate for its market . . . . **KRBJ-FM**, Monte Rio, CA, has become the first affiliate of the San-Francisco-Based National Gay Network (NGN). NGN's newscasts will also be heard in Australia on station 2XX's *Gay Viewpoint* program; *Gay Viewpoint's* producers will also share their material with NGN . . . . **WELI-AM**, New Haven, CT, will produce hourly, live 60-second local newscasts for Storer Cable TV of Connecticut, Inc.

IEEE's thirty-second **Annual Broadcast Symposium** will meet September 15 through 17 at the Washington Hotel, Washington, DC . . . . **FOC '82**, the sixth International Fiber Optics and Communications Exposition, will take place at the Los Angeles Marriott Hotel September 15 throgh 17 . . . . George Washington University of Washington, DC, is **sponsoring a conference** on "Radio Spectrum Management in a Period of Rapid Technological Change: The Government's Role," September 29 through October 1. Call Brent Weingardt at (202) 676-8262 for details . . . . Deadline is October 1 for applying for the Society of Broadcast Engineers' latest round of **certification exams**, to be held November 12 through 20.

Think of us as your mike expert.



The CO94. All miniatures are not created equal.

Until now, the engineer faced with selecting a miniature microphone was hard pressed to find any dramatic differences in performance. That is, up until the Electro-Voice CO94.

For starters, the CO94 offers unprecedented dynamic range. It has 10 dB greater sensitivity and 20 dB greater input SPL handling capability than the best known competitor. This high performance makes the CO94 ideal for stereo spaced-omni recording, close miking of high output musical instruments, as well as standard lavalier applications.

The CO94 also offers exceptional powering flexibility. It can be powered by a standard 9-volt radio-type battery. Or it can be phantom powered from a mixing board, recorder, or in-line supply. The 9-volt battery can even be used as a redundant power source to "back-up" the phantom power. Plus, the CO94's advanced electronic design permits powering from virtually any DC power supply, capable of delivering between 8 and 50 volts. The internal regulation and filtering will make the CO94's impedance converter swear it's being powered by an over-priced import supply.

These and many other performance features set the CO94 a giant step above the other miniatures you previously had to choose from. The CO94 is a versatile new kind of tool, and just one more reason why you should think of Electro-Voice as your microphone expert.

Electro-Voice
a gulton company
600 Cecil Street, Buchanan, Michigan 49107
In Canada
Electro-Voice, Div of Gulton Industries (Canada) Ltd.,
345 Herbert St., Gananoque, Ontario K7G 2V1.

Circle 112 on Reader Service Card

www.americanradiohistory.com

AFFORDABLE ONE-INCH

Introducing the Ampex VPR-80.
Type "C" broadcast quality on a budget.

Excellent picture quality and low cost. That's what you get with the VPR-80, the new professional video recorder from Ampex. Whether you're adding to your present facility, or moving into the professional video market, you'll find the VPR-80 to be a totally new concept. Yet, it incorporates the most demanded features of the world's most popular one-inch Type "C" VTR, the VPR-2, plus several new and advanced capabilities.

The VPR-80 provides the latest in recording technology. You get a transport designed for superior tape handling of all reel sizes from 6½ inch "spots" to 2-hour, 11¾ inch reels. It has dual microprocessors to control all VTR functions and servo systems, a universal power supply, built-in audio monitoring and a power-down feature that remembers the control panel setup even when the power's off. Plus built-in diagnostics to keep operation and maintenance costs to a minimum. But there's more.

You also get as standard the Ampex exclusive AST™ automatic scan tracking for perfect slow motion and still frame pictures, plus frame-accurate editing with simple, operator-oriented controls. Not to mention table-top or rack-mount versatility and compatibility with the entire family of Ampex VPR accessories. With the VPR-80, everything from setup to servicing can be accomplished with a minimum of effort and time.

The VPR-80 was truly designed for the operator. And it's backed by the unique worldwide service and support that Ampex is known for. To find out how the VPR-80 fits into your application, contact your Ampex representative or write Ampex Corporation, Audio-Video Systems Division, 401 Broadway, Redwood City, CA 94063 (415) 367-2011.

AMPEX

TOOLS FOR TOMORROW

Ampex Corporation • One of The Signal Companies

Serviceability
From the top, front and back with hinged door assemblies providing easy access to the audio system, major plug-in printed wiring assemblies and power system.

Advanced Transport Design
For fast and gentle tape handling of all reel sizes from 6½ inch "spots" to 2-hour, 11¾ inch reels.

AST™ Automatic Scan Tracking
Delivers disturbance-free slow motion from play to still-frame mode.

Individual Head Replacement
Quickly with only a screwdriver. No mechanical adjustment or drum change required.

Frame-Accurate Editing
Results from the VPR-80's precise tape timer and search system, AST™ and simple edit controls.

Fault And Non-Standard Operation Detection
Performed as part of the power-up sequence. If detected, the specific condition appears as a unique code in the timer display.

Circle 113 on Reader Service Card

www.americanradiohistory.com

Specify SIGMA . . .

If SC/H Phase is critical to you, then be critical . . . Specify SIGMA SYNC GENERATORS. Both Models CSG-360A and CSG-365A lock horizontal directly to subcarrier so you can be sure it is in the proper place, all the time . . . even resets the phase on power up.

Additional Standard Features:

- Genlock to Helical VTR's
- Adjustable Blanking Widths
- Black Burst Output

CSG-365A Only

- Split Field Color Bars Output
- Crosshatch Output

Call a Sigma Dealer near you

SIGMA ELECTRONICS INC.

1830 STATE STREET, EAST PETERSBURG, PA 17520
(717) 569-2681

Circle 114 on Reader Service Card

AGAIN & AGAIN
POTOMAC INSTRUMENTS IS

PRODUCT INNOVATION 1ST

First FCC Approved Antenna Monitor

First Harmonic Reading Field Strength Meter for Standard Broadcast Stations

First Digital Antenna Monitor

First Frequency Synthesized RF Generator with Coherent Detector for RF Bridge Applications

First Solid State Combination VHF Field Strength Meter and RF Generator

First Audio Generator with these Features: L&R Outputs, Stereo Matrix Switch, IM Signal Source, Signal Leveling, Precision Attenuators, Mike and Line Source Impedance, Balanced and Unbalanced Outputs

First Audio Analyzer with these Features: L&R Inputs, Auto Leveling and Auto Nulling THD Analyzer, IMD Analyzer, Wow and Flutter Meter, Stereo Phase Meter, Differential Gain Meter

CONTACT US NOW FOR DESCRIPTIVE LITERATURE ON OUR COMPLETE LINE OF BROADCAST INSTRUMENTATION.

POTOMAC INSTRUMENTS

932 PHILADELPHIA AVE.
SILVER SPRING, MD 20910
(301) 589-2662

Circle 115 on Reader Service Card

BUSINESS BRIEFS

JVC Company of America is the new name of the restructured sales and service division of **US JVC Corp**. . . . **Channel 9** in Australia started its Los Angeles production studios, ENG operation, and satellite broadcasting center with the purchase of three **Sony** BVP-330 cameras, two BVU-110, two BVU-800 VTRs, and three BVH-1100A VTRs. Sony also announced the sale of four BVP-250 video cameras to **KTVT** in Fort Worth, TX. Four BVU-50 VTRs and seven BVE-800 editors were also sold totalling over $200,000. . . .**KVVU-TV** in Las Vegas has purchased four new Sony VTRs. . . .and **Sun Television** acquired four BVH-2000 VTRs.

EMCEE has acquired an in-house tower construction firm for complete construction, engineering, and maintenance operations. . . .**Otari** has established a new research and development division to create a testing and listening environment for future products. . . . **Swedish Radio** has purchased more than 20 **MCI** JH-600 Series audio mixing consoles with more on order, including the top-of-the-line JH-652. . . .**Valley People, Inc.** has established a new division for retail sales, to be housed in its own building, taking effect June 1982.

Microwave Associates-Land Mobile Communications Division has changed its name and is now called **M/A-COM Land Mobile Communications,** Inc. M/A-COM also announced that its Video Satellites Company has signed a contract for equipment with the **Catholic Telecommunications Network.**

Altec Lansing has installed the complete sound system in the Hubert Humphrey Metrodome which houses the Minnesota Twins and Minnesota Vikings; the system includes power mainframes and input and diver cards, constituting over 7,000 watts of power.

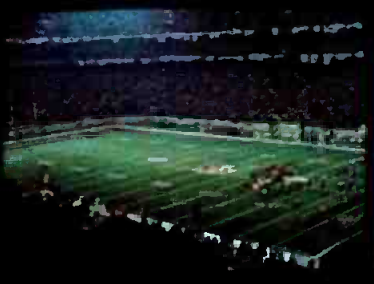
In other developments in personnel, **Scientific Atlanta** appointed Paul Hansil to sales manager for the satellite communications division, and Mike Kelly to manager for the satellite radio product line. . . .**RCA** has named W. Arnold Taylor to VP marketing, and Keith G. Johnson to director, international product planning.

Rodney K. Madsen has joined the **Cetec Corp.** as corporate VP. . . . **Moseley Associates, Inc.** announced that Kinsley Jones is now manager of US sales; the company has also named Fred Zimmerman president. . . . Robert Auguste has been appointed to VP engineering for **Cinema Products**. . . . the new VP of marketing and planning for **Altec Lansing** is William Chambers.

www.americanradiohistory.com

40 to 1

Canon PV40 x 13.5B IE: THE OLYMPIAN



Canon moves you a giant step forward with a 40X broadcast quality zoom lens. An incredible new lens that allows you to cover a stadium at wide angle or fill the frame with the quarterback's eyes.

Never before has a single lens provided this much flexibility and sensitivity, with remarkably little change in effective aperture throughout its entire 13.5mm-540mm* range. Built-in extenders let you go all the way to 1080mm and each lens is diascope-equipped for modern microprocessor-controlled cameras.

We call it The Olympian. Not only because it is ideally suited for sports coverage but also because of the dedication and team effort required of our optical and electronic engineers in making this lens a reality.

Enlarge a dollar bill forty times and it covers an area twenty feet long and eight feet wide. Now think about what you could do with the Canon PV 40 x 13.5B IE!

*1" cameras. Also available in 30mm plumbicon.

Canon®

Optics Division

Canon USA, Inc., Head Office: One Canon Plaza, Lake Success, N.Y. 11042 (516) 488-6700
Dallas Office: 11311 Stemmens Freeway, Suite 1, Dallas, Texas 75229 (214) 620-2641 Chicago Office: 140 Industrial Drive, Elmhurst, Ill. 60126 (312) 833-3070
West Coast Office: 123 Paularino Avenue East, Costa Mesa, Ca. 92626 (714) 979-6000
Canon Canada, Inc., 3245 American Drive, Mississauga, Ontario L4V1B8, Canada (416) 678-2730

© 1982 Canon U.S.A., Inc.

Circle 116 on Reader Service Card

www.americanradiohistory.com

IF IT WERE YOUR JOB TO GET THIS ON TAPE, WHAT TAPE WOULD YOU GET IT ON?

In an era of new technology and changing social values, the Royal Wedding is a throwback to another century. And for a few unhurried hours, the entire world will take the time to enjoy this real life fairy tale.

Satellites will carry the signals around the globe. But for many, including those in America, the Royal Wedding will be seen on tape. The scheduling is tight. The ceremony will go on the air while the procession is still being recorded. There is no time for second chances.

That's why Scotch® Video Tape was there when the Royal Wedding was first recorded. And again when the Moon Walk was first recorded. And again when the Space Shuttle Landing was first recorded.

U.S.-Russia Hockey Game. The Return of the Hostages. The Eruption of Mount St. Helens. Whenever there was one chance to get it, chances are they got it on Scotch Video Tape.

So whether your production is important to the world or just important to you, why take chances? Get it on the one tape you know will get it right.

Magnetic A/V Products Division/3M.

"Scotch" is a registered trademark of 3M.

www.americanradiohistory.com

HISTORY IS RECORDED ON SCOTCH VIDEO TAPE.

3M hears you...

3M

www.americanradiohistory.com

Like father, like son.

For roughly $10,000, you can own the ultimate analog mastering deck—the Studer A80RC half-inch two-track recorder.

Beyond your budget? Well, for about 1/5 the price you can own a Revox PR99 compact professional recorder. It's made by the same company, it draws on the same wealth of engineering expertise, and it reflects the same philosophy of design and construction—a philosophy established by Willi Studer over three decades ago.

The PR99's bloodlines are evident in every detail...in the precision-machined headblock, the rugged die-cast chassis, the servo-controlled capstan motor, and the Studer-made heads. Professional design features include a flat faceplate for easy head access; edit switch to defeat tape lifters and fast wind latching; tape dump button; balanced XLR inputs and outputs switchable for calibrated or uncalibrated mode; and two-way self-sync with auto input switching. The PR99 may be ordered with 3¾-7½ or 7½-15 ips tape speeds. Vari-speed, full remote control, and monitor panel available as options.

The PR99 now comes in console, rack mount and transportation case versions. Check it out. Call or write today for the location of your nearest dealer.

The PR99. From the world's most respected name in recording.

STUDER REVOX

STUDER REVOX AMERICA, INC. • 1425 Elm Hill Pike • Nashville, TN 37210 • (615) 254-5651

Circle 117 on Reader Service Card

www.americanradiohistory.com

RADIO programming & production

WGN Defies Narrow Audience Orthodoxy

IN A DAY when a narrowly defined program format designed to reach a narrowly defined audience segment is the rule of thumb for most radio stations, WGN-AM, Chicago, flagship radio station of the Tribune Broadcasting Company, remains defiantly unconventional. A versatile and innovative outlet for news, talk, and personalities as well as music—without narrow targeting—WGN has also become a phenomenal success.

"It's the chicken and the egg theory," explains program manager Dan Fabian cryptically. "It works because it's the way it is, and it's the way it is because it works."

The station has been a success almost since its founding in the 1920s. The Chicago Tribune purchased station WDAP in 1924 after it had gone on the air in 1922 as an O&O of Midwest Central. Under the call letters WGN (for "World's Greatest Newspaper") the station began its growth from one of many 1000-watt local operations to a 50,000-watt clear channel in 1934.

Even from the early days, the station instituted its emphasis on the presentation of pertinent news and its willingness to seek it out and prepare it. This laid the groundwork for the amalgam of program material which included live sports, remote news with live feeds from the scene, and a mixture of comedy, drama, and music supported by a broad range of on-air talent.

WGN's current news department, run by Paul Davis, is a combined operation with the Tribune's TV operation. The talents of seven reporters are split, as are those of 10 writers who share the air work with three core newspersons.

The station has gone from a heavy rewrite operation to an almost exclusively performance/reportage staff. Six vans and two small Enstrom helicopters are employed. The latter are primarily for traffic reporting but are pulled into live coverage if necessary.

Ray Leonard interviews Chicago Mayor Jane Byrne during WGN remote broadcast.

"No-Stretch" Phillystran® HPTG

the only flexible FIELD PROVEN electrically transparent tower-guy system

1. eliminates EMI and RFI at broadcast sites

2. simplifies installation of AM, FM, AM directional and TV towers. Made with DuPont's Kelvar®. Lightweight, flexible, yet as strong as extra-high-strength galvanized steel* . . . negligible creep, negligible elongation with new HPTG* for tension-once and walk-away installations.

3. maintenance free. Non-conducting, non-corroding, nonmetallic. No internal corrosion. No white-noise arcing across insulators. No insulators required.

4. no more expensive re-guying.

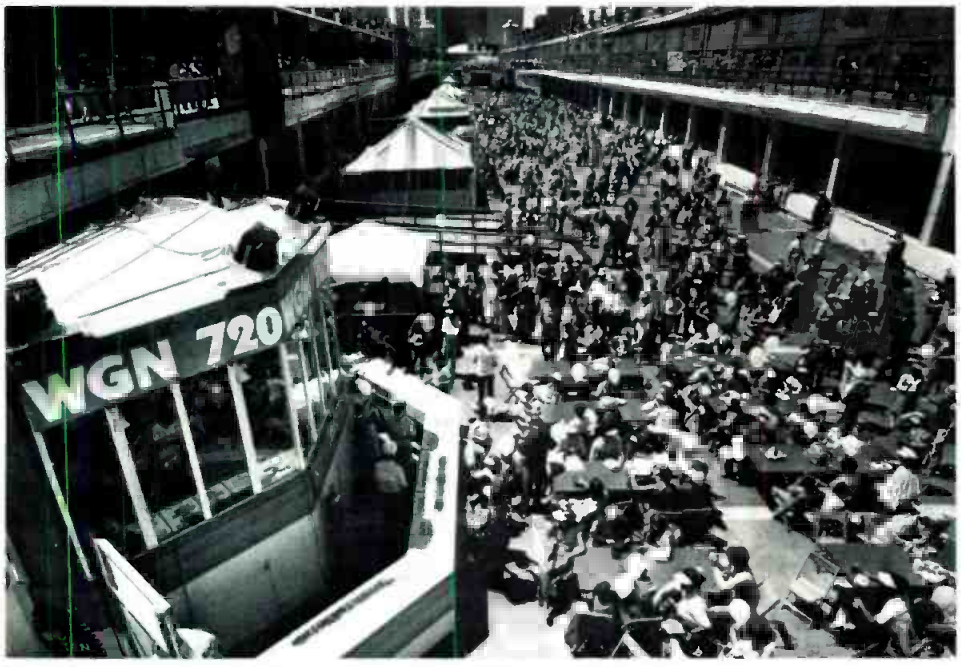
*Comparative stress-strain data and information about other physical properties available on request.

Call/write for:
10 REASONS WHY YOUR BEST BUY IS PHILLYSTRAN®
and the new
PHILLYSTRAN® HPTG

PHILADELPHIA RESINS CORP.
20 Commerce Drive
Montgomeryville, PA 18936
(215) 855-8450
an uncommon organization doing big things worldwide in a quiet way.

Circle 118 on Reader Service Card

www.americanradiohistory.com



WGN broadcasts from its remote studio at the Lakefront Festival.

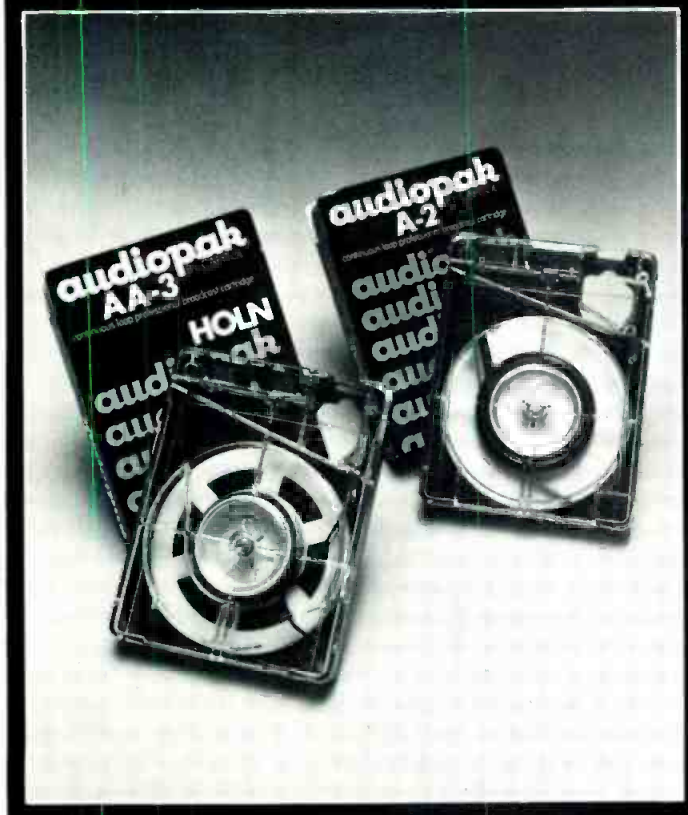
The on-air staff is organized similarly so that journalist/reporters are also entertainers, getting the same audience interest in their talk and information shows from a "personality" standpoint as they do from their investigative endeavors. It is not uncommon, for instance, for the two drive-time announcers to come up with important information from their own sources long before other news staffs are able to gather the same facts.

An additional factor in the regular news presentations is the farm reporting, including coverage of the many auctions, fairs, and exhibitions for livestock in the Chicago area. In fact, the coverage of agricultural and business issues is so extensive, the two news editors log more than 100,000 air miles per year. As Fabian says, "We are essentially a news/entertainment station, a reflection of our listeners."

In order to maintain this kind of profile, the station tries to keep the on-air personalities in descending age, with the AM drive host in his 40s, the evening talent in its 20s, and other personalities in between. This helps with audience attraction, provides for greater programming variety, and capitalizes on the specific individual talents of each host.

In this respect, each host uses the available tools to reinforce further those elements of his show with which the listeners strongly identify. Bob Collins, the afternoon drive host, uses music as a comedic tool and also plays rock and roll trivia. Wally Phillips handles the morning drive and gears his programs toward news, community involvement, and listener communication by telephone. Still other time slots have live remotes or studio music, reflecting what is going on musically in

THE CHOICE IS YOURS!



THE AUDIOPAK A-2 OR THE STEREO PHASED AA-3 BROADCAST CARTRIDGE

Capitol Audiopak Broadcast Cartridges—for stations who care how they sound.

Both Audiopak carts offer extremely low wow and flutter; a positive brake system which stops the tape, not the hub, assuring accurate cueing. Unsurpassed reliability is assured because we manufacture the tape and all other components in the cartridge. Moreover, all carts are 100% tested before shipping.

The AA-3 offers excellent stereo phase stability. It's loaded with Capitol's own Q17 HOLN tape which extends frequency response and headroom to provide studio sound quality.

CAPITOL MAGNETIC PRODUCTS
A Division of Capitol Records, Inc.
6902 Sunset Blvd.
Hollywood, California 90028

Capitol®

©1980 CAPITOL RECORDS, INC.

Circle 119 on Reader Service Card

www.americanradiohistory.com

Amid the hostility, the confusion, the competition, one microphone stands above the crowd.

The SM63.

No matter how rough things get in the field, the Shure SM63 Omnidirectional Dynamic Microphone gives your crew the whole story with a lot less handling noise than any microphone in its class. When Shure's engineers developed the SM63 and SM63L (with longer handle), their objective was to create a high-output, lightweight microphone perfect for the needs of electronic news journalists.

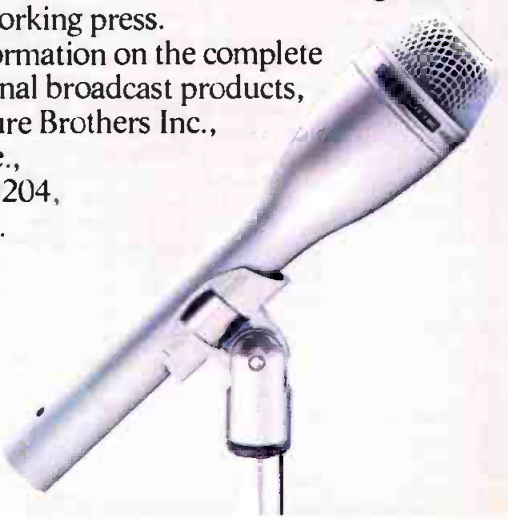
With the SM63's patented internal mechanical isolation system reducing undesirable handling noise, its high output and smooth extended frequency response lets your story come through crisp and clear. Its omnidirectional polar pattern prevents boominess that is often encountered during close miking situations. And its overall lightness makes continuous hand-held ENG/EFP assignments less fatiguing, without sacrificing ruggedness. Even its profile is small and elegant so it won't obscure faces on camera.

The output of the SM63 is a full 6 dB higher than comparable hand-held interview microphones.

And there are even more precision-engineered refinements. A highly effective internal humbucking coil rejects strong magnetic fields encountered around lights and other broadcast situations. And when things get really tough, the Shure-developed *VERAFLEX*® grille is virtually impervious to rust, moisture and dents. This system includes a highly effective internal anti-wind and -pop filter; and for more adverse conditions, a dual-density two-layer windscreen also is supplied.

The Shure SM63. The hard-working microphone for the working press.

For more information on the complete line of professional broadcast products, call or write Shure Brothers Inc., 222 Hartrey Ave., Evanston, IL 60204, (312) 866-2553.



SHURE®

THE SOUND OF THE PROFESSIONALS®..WORLDWIDE

Circle 120 on Reader Service Card

www.americanradiohistory.com

Agricultural reporter Oriaon Samuelson covers an auction during remote broadcast.

the city at that time. The themes in all of this programming are strength and listener appeal through diversity.

Another key aspect of the station's programming is sports. The first play-by-play broadcast of the Chicago Cubs was done in 1922 by the station. The tradition continues with the entire Cubs schedule being aired along with 16 exhibition games, plus Big Ten football and major college basketball games. As in news coverage, WGN's sports department goes to the events wherever they occur if they are deemed worthy of coverage—such as the longest baseball game in history (22 innings) which took place at a minor league park in Pawtucket, RI in 1981. Upon discovering the date and place the game was to resume play, WGN dispatched a crew.

Recently, after a 20-year hiatus, WGN has once again become a partial affiliate of the Mutual Radio Network. WGN takes the entire sports package and emergency news service offered by Mutual because it has what management considers great strength of local interest. This includes the entire Notre Dame schedule.

Also in the success formula is WGN's willingness to try advanced technology and new systems. The station is presently AM stereo capable, with equipment on order from both Harris and Kahn, awaiting final type approval from the FCC.

It is clear that WGN's willingness to diversify, to reinforce personalities with individualized programming, to travel to faraway places such as Austria, Poland, and Israel in search of news, and to take risks that go against the usual practice of modern radio programming—all these things combine to make WGN an innovative, if unconventional, leader. **BM/E**

Why Your Radio Station Should Own An Eventide H949 Harmonizer.®

• IT'S A COMPLETE AUDIO TIME COMPRESSION SYSTEM AT A FRACTION OF THE PRICE

The $3500* H949 gives you the same audio time compression and expansion capabilities of competitive single-purpose units costing well over twice as much. You get the power to control time itself...with no editing, no program material deleted and no abnormal pitch effects.

• IT'S A COMPLETE SPECIAL EFFECTS DEPARTMENT

The Eventide H949 Harmonizer® special effects unit gives you an almost endless variety of effects. There's variable delay, echo and reverb. Feedback level and equalization controls let you "custom-tune" the audio. Pitch change capability can create new voices. Mix input with pitch-changed output for chorus and harmony effects. Want the distinctive sound of flanging? The H949 offers the best flanging ever. There's time reversal and repeat too. For even more versatility, many more effects can be created from combinations of the basic effects.

WHAT CAN THIS MEAN FOR YOUR STATION?

• IT CAN HELP YOU MAKE MORE MONEY

Go after those co-op dollars! The H949 can easily compress an existing national spot to accommodate a local retailer tag. Local advertisers who deliver their own ad copy will love what the H949 can do. Endless retakes to correct the non-professional's timing errors are eliminated. Use pitch-change to make that local retailer sound more like an announcer (He'll love that!) Time compression wih the H949 can bring order out of chaos when running back-to-back religious or political programs which are often mistimed. And, you'll find yourself doing more and better station-produced local spots—with those special audio effects that make for a more professional custom production. Your advertisers will notice and appreciate the difference.

• IT CAN GIVE YOUR STATION A MORE DISTINCTIVE, TIGHTER SOUND

The H949 Harmonizer can really make a difference. Use its special effects capabilities to produce really distinctive promos, intros and custom jingles. For a brighter, fast-paced sound, some stations choose to speed up their music by a few percent, utilizing the Harmonizer to maintain normal pitch. Using pitch-change, you can even create new voices to populate your air.

MOST EVENTIDE DEALERS HAVE EVALUATION UNITS AVAILABLE. CALL EVENTIDE TODAY FOR THE DEALER NEAREST YOU.

*List price in domestic U.S.

Eventide the next step

265 West 54th Street
New York, N.Y. 10019
(212) 581-9290

Circle 121 on Reader Service Card

www.americanradiohistory.com

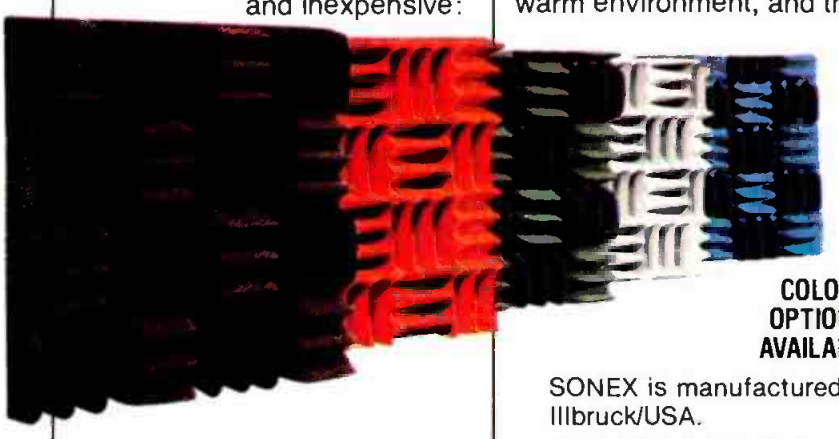
SONEX

FOR CLEAN SOUND

After WLEE installed SONEX, people called about the "clean, new sound!" Was it new equipment?

No. The answer is simple and inexpensive: SONEX kills all the stray reflections, so the mike processes a clean signal of the announcer's voice. The announcer hears himself in a warm environment, and there's less clutter to waste watts. The result is a noiseless, clear signal and greater market penetration.

Get the facts today. SONEX is available in five colors, in three thicknesses, and in standard four-ft. square panels. Use it in broadcasting, recording, videotaping or performing areas for really pure, clean sound.



COLOR OPTIONS AVAILABLE

SONEX is manufactured by Illbruck/USA.

Alpha Audio®

2049 West Broad Street
Richmond, Virginia 23220 (804) 358-3852

Acoustic Products for the Audio Industry

Circle 122 on Reader Service Card

www.americanradiohistory.com

WORDS & PICTURES

Introducing Vidifont® Graphics V. The character/graphics system with unique technological innovations.

Everything you need to combine operator ease with artistic beauty. Total creative freedom. A rainbow of colors. An infinite variety of animated effects. Plus multi-user access.

Graphics V.™ Sophisticated. Easy to use. Practical. Flexible. Everything you'd expect from the great Vidifont tradition.

THE FACTS SPEAK FOR THEMSELVES

☐ Eight full-set fonts. Up to 48 in resident memory. ☐ 256 automatic kerning combinations of intercharacter spacing. ☐ 4,096 colors in resident collection. ☐ 16 color "quads" instantly on-line. ☐ Backgrounds. Created independently of foreground character plane and enlarged or reduced. ☐ Capability to mix italics and conventional characters on the same row. ☐ Edge types include border, shadow and outline. ☐ Edging may be extended in any direction. Up to 256 scan lines.

☐ Compact component design for mobile applications, built-ins, or custom console. ☐ User stations and disk storage may be located hundreds of feet from main electronics.

☐ Up to 8 keyboards can operate simultaneously. ☐ Simultaneous on-line accessibility provided by two independent, full-function, high resolution channels. ☐ Over 35 pages instantly accessed on-line. Unlimited additions from disk.

☐ Character appearance enhanced by edge polishing to eliminate objectionable effects of aliasing.

☐ Exclusive area composition permits composing and editing in one section of the display without disturbing adjacent items. ☐ Free-form manipulation through double-buffered frame store. Character placement not limited by row-structured page.

☐ Margins can be released in any or all directions. Displays can "bleed" or run off the edge of the screen. ☐ "Cut and paste" capabilities. ☐ Multi-planar character and row stacking. ☐ Unique restore function permits examination of sequenced displays. Graphics V steps back and restores previous display for comparison.

THE WIDEST ARRAY OF DYNAMICS

☐ Rolls/crawls. 196 speed/direction combinations. ☐ Up to four displays may be moved in any direction simultaneously. ☐ Ripple-on/ripple-off. Character-by-character appearance or removal at any of 127 rates. ☐ Timing relationships may be examined event-by-event, re-arranged, re-timed or otherwise adjusted.

EASY TO USE

☐ Operator-oriented design. Prompted and menued entries. Logically laid out keyboard. ☐ Independent color edit outputs for each channel. ☐ Standard setup always available. When a different, often-used format is required, operator loads in a "user environment." Fonts, colors, channels, levels, tabs, margins, etc. are automatically configured and placed on-line. ☐ Self-test and diagnostics.

Circle 123 on Reader Service Card

www.americanradiohistory.com

FONT COMPOSE

☐ Plug-in module allows in-house creation of fonts, logos, and graphics. Generated from artwork or electronically synthesized. Full range of composition, editing, and creative aids available directly on keyboard.

Vidifont® IVA. With Vidivote™ and Viditext.™ The cost-effective champ of character generators. Includes so many of the capabilities of Vidifont Graphics V.

For complete information about the new Vidifont Graphics V, send for our brochure. Thomson-CSF Broadcast, Inc., 37 Brownhouse Road, Stamford, CT 06902. Tel. (203) 327-7700.

West Coast Sales & Service, 1919 West Magnolia Boulevard, Burbank, CA 91056. Tel. (213) 849-2188.

THOMSON-CSF BROADCAST, INC.

Please come and see us at RTNDA Show Booth Nos. 35 and 36

www.americanradiohistory.com

The maximum for the minimum

In designing the HK-302, Ikegami kept the frills —and the price—to a minimum while maximizing the performance. And that helps keep a moderate equipment budget from interfering with first-quality program origination.

However, staying with the basics doesn't mean sacrificing advanced technology. The HK-302's highly efficient optical system coupled to ⅔" low capacitance diode-gun Plumbicon* tubes and high transconductance FET pre-amps deliver sharp, low noise pictures (S/N 57 dB) with excellent colorimetry. And the compact camera head includes a full range of operational automatics to ensure consistent signal quality.

Built-in test, maintenance and operational features are integral parts of this camera's "basics" as well. A comprehensive test pulse system lets you adjust the video with the pick-up tubes off or removed. Complete monitoring circuitry and a broadcast quality sync generator with genlock are also standard features.

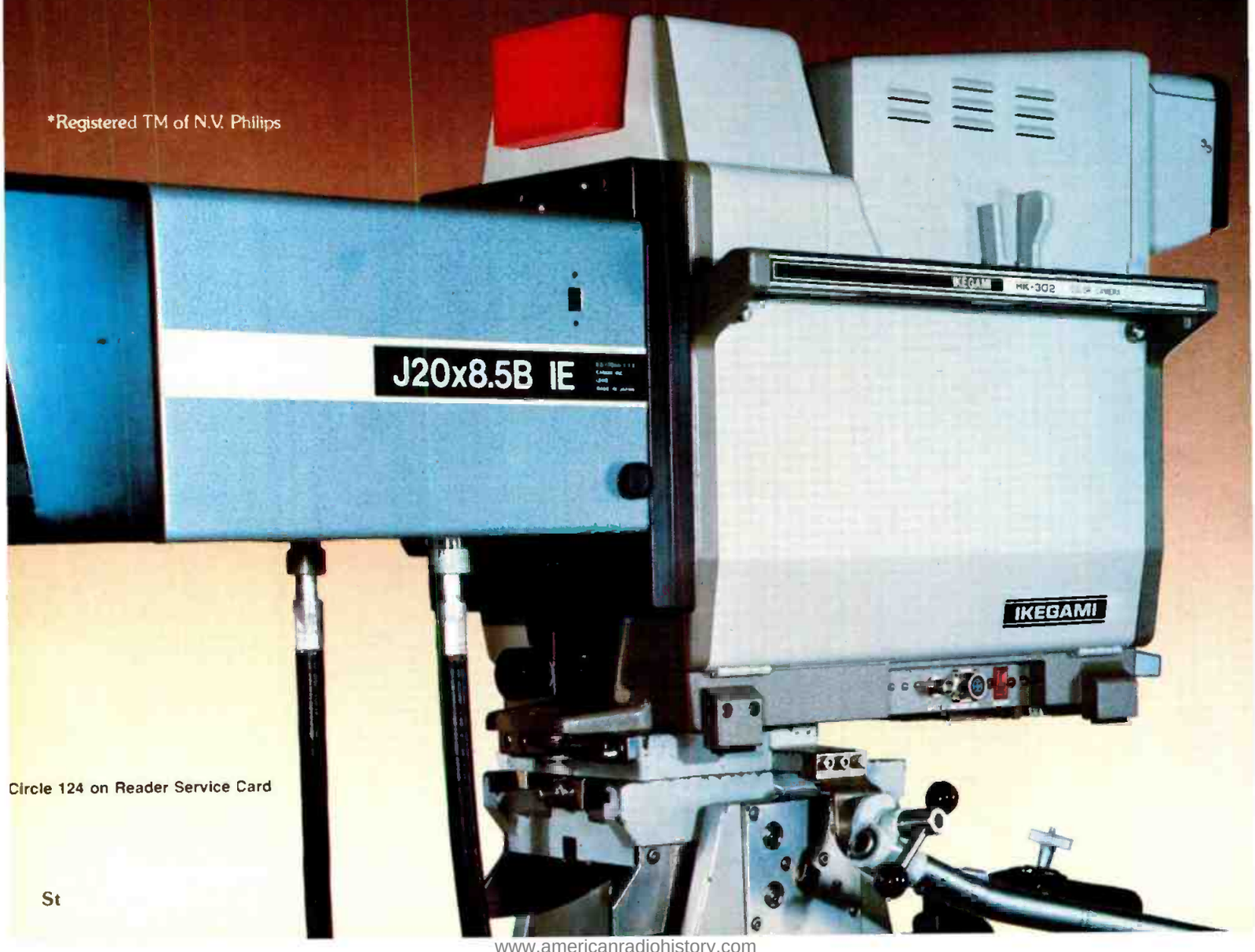
To add to the versatility of the HK-302, use the Ikegami automatic highlight compression option. It ensures highly detailed pictures even in high contrast scenes.

With the HK-302 you don't have to mortgage your station to afford prime time performance. So if you're looking for the maximum in studio production capability with a minimum of cost and maintenance, look over the Ikegami HK-302. For complete information and a demonstration, contact Ikegami.

Ikegami HK-302®

Ikegami Electronics (USA) Inc., 37 Brook Avenue, Maywood, NJ 07607. (201) 368-9171
Northeast: (201) 368-9171 ☐ **West Coast:** (213) 534-0050 ☐ **Southwest:** (713) 445-0100 ☐ **Southeast:** (912) 924-0061 ☐ **Canada:** (201) 368-9179

*Registered TM of N.V. Philips



Circle 124 on Reader Service Card

St

www.americanradiohistory.com

Magazine Shows Seek 3/4-Inch EFP Alternatives

EVEN THOUGH the economic recession may be affecting broadcast media more slowly than other segments of the economy, broadcasters and program producers are wisely seeking to reduce their budgets without hurting quality. This prudence is leading more and more of them to opt for 3/4-inch production and post-production as a cost-effective alternative to one-inch EFP.

Three-quarter-inch recorders are widely used for ENG work, of course, but network-quality productions have relied more on the higher production value of one-inch. The increasing quality of 3/4-inch equipment, though, is starting to take it out of ENG and into more exacting EFP work.

This trend was noted last April in a story on *Real People*, the syndicated magazine-style show that does all its field production on 3/4-inch (*BM/E*, April 1982, p. 33). Also making extensive use of 3/4-inch production and editing is *You Asked for It*, which has had great success with Sony's state-of-the-3/4-inch-art BVU-800 (see *BM/E*, July 1982, p. 23).

Further evidence of the trend is San Francisco production house Varitel Video. Varitel's year-old facility was built especially for network-quality 3/4-inch work, and the company's client roster includes *PM Magazine*, *Entertainment Tonight*, and other widely viewed magazine programs. According to Varitel's general manager, Jack Schaeffer, it is only natural that Varitel should attract so much work from magazine shows.

"We have a lot of experience in magazine-format work," Schaeffer explains. "Most of us come from *Evening Magazine* at KPIX, which was the first of those shows to be produced entirely on 3/4-inch tape. At that time it was unique, and we all learned to shoot and edit on 3/4-inch, not tying up an entire control room and being able to edit stories or segments in a very intimate situation."

Moving in

The arrangement works so well, Schaeffer says, that one independent network magazine show has actually made a home-away-from-home at Varitel, taking over 1000 square feet of

Equipment in the second of Varitel's two 3/4-inch edit suites includes (left to right): three BVU-200s, Microgen character generator, Convergence 103B editor, Texas Instruments printer, Gray time code generator and reader, UREI 565 notch filter and 535 graphic equalizer, Adda VW1 remotes, Yamaha power amp, JBL and Auratone monitor speakers, Otari MX 5050 ATR, Yamaha 12 x 2 audio console, and Technics turntable.

BEHIND THE LENS OR IN FRONT,

TIFFEN FILTERS ARE THE INDUSTRY'S FIRST CHOICE.

Most major manufacturers of video cameras install Tiffen filters as original equipment in the filter wheel behind the lens.

Most major TV stations and studios use Tiffen filters in front of the lens.

Why? Because cameras are only as good as their components When quality components are required Tiffen filters meet all the requirements.

They're rugged, reliable, precision-made. And the performance is always outstanding.

Superior technology and quality craftsmanship combine to make Tiffen filters the industry's first choice.

Tiffen Makes Filters For

Ampex	Harris	Rank Taylor Hobson
Angenieux	Ikegami	RCA
Canon	IVC	Schneider
Fernseh	Marconi	Thompson
Fujinon	Norelco	And Many Others
GE	Phillips	

Write Dept. BM/E for FREE Professional Brochure and Price List.

TIFFEN®

90 Oser Avenue, Hauppauge, N.Y. 11788
(516) 273-2500 Telex 96-7748

Circle 125 on Reader Service Card

www.americanradiohistory.com

One-inch mastering suite offers Quantafont character generator (not shown), Convergence 104 editor, Sony time code generator/reader, and Thomson color corrector. Video monitors are by Ikegami and Videotek, and a Grass Valley 16001L switcher will be added soon.

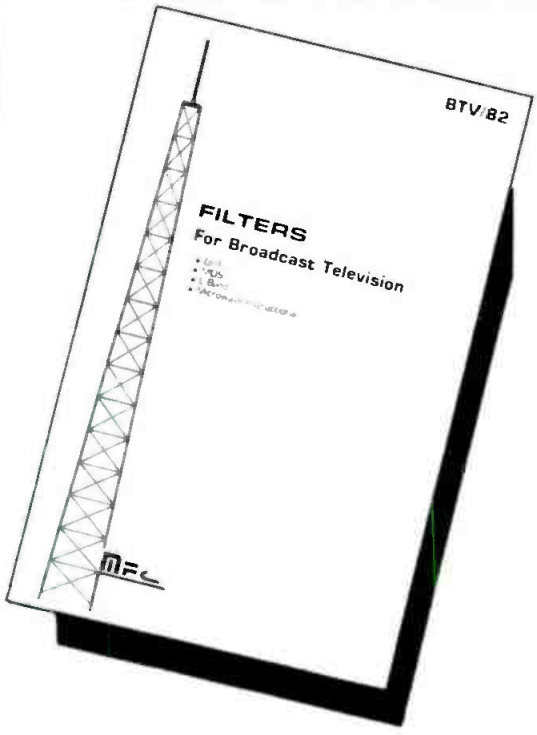
the new 7200-square-foot facility. Half-a-dozen show personnel are permanently stationed at Varitel. They supervise the field shoots, with all recording done on 3/4-inch.

"Actually, they used to do about half in one-inch and half in 3/4," Schaeffer comments, "but they slowly switched over to 3/4 because of the economy of the situation." Field segments are shot primarily with Sony BVP-330 cameras (Ikegami HL-79s are also used) and taped on Sony BVU-110s. Time code is recorded in the field using the BVU-110's built-in generator. Back at Varitel, the producers have a screening station that reads the time code, allowing them to plan out the edits for each field segment in advance.

After carefully planning the edit, the producer takes the segment into the editing room permanently booked for the show. According to Schaeffer, the producers work on a schedule that requires them to edit and complete a story in one day. They rotate through the edit suite, preparing their segments to go to the network headquarters, where they are dubbed up to one-inch and incorporated into the final program.

Another frequent user of Varitel's edit suites is Group W's *PM Magazine*, which takes advantage of the 3/4-inch-to-one-inch mastering system in Edit

If We Don't Already Have The Broadcast TV Filter You Need...



We'll Build It, Fast.

Catalog BTV/82 is 16 pages of filters, traps, diplexers and channel combiners that are currently in use in UHF, MDS, L-band and microwave instructional TV applications. Maximum delivery time for most standard products is 10 days.

But if you need a one-of-a-kind special and you can't afford to wait, we've still got you covered—we'll design and build exactly what you need for your installation, and we'll work around the clock to deliver it when *you* need it.

Use our toll free number and talk to the RF or microwave engineer who will design your special filter. He'll give you a prompt, on-line analysis of your specifications, and he'll quote price and delivery time. Before you hang up, you'll know what you need, when you'll have it and how much it will cost—all with just one phone call!

Once you've placed an order, our unique QRC (quick reaction capability) begins to work for you: QRC combines computer-aided design with our dedicated model shop and test labs to ensure that your filter will be what you need when you need it.

When you need a special filter designed exactly to your specifications, and you need it *now*, call MFC!

MFC MICROWAVE FILTER COMPANY, INC.

6743 Kinne St., East Syracuse, NY 13057
Toll Free 1-800-448-1666 —— TWX 710-541-0493
NY/HI/AK/Canada (Collect) 315-437-3953

Circle 126 on Reader Service Card

www.americanradiohistory.com

Give or take a few pennies, and using some conservative assumptions (18hr/day, 5 year full depreciation), that's all it costs to replace your current audio processor with an Orban OPTIMOD-AM, -FM, or -TV. And get an *immediate* improvement in on-air audio quality. An improvement that pays off every minute of every hour of every operating day.

OPTIMODS are fully adjustable to program requirements. Their patented technology has literally revolutionized audio processing in the last six years, and yields a cleaner, brighter, louder sound unmatched at any price.

And their superior sound is complemented by Orban quality and service - a well-established, industry-respected commitment that protects your investment.

Money may be tight. But particularly in trying economic times, the winners are those who compete hardest and deliver the best-sounding product to their audience. OPTIMODs are lethal competitive weapons. And, at 13¢/hr, *very* sound investments.

Can you afford not to go with an OPTIMOD?

For further information, see your local Orban Broadcast Products dealer.

Orban Associates Inc.
645 Bryant Street
San Francisco, CA 94107
Telex: 17-1480
Toll Free (800) 227-4498,
in California (415) 957-1067.

orban

ORBAN PROCESSING KEEPS YOU COMPETITIVE

Better audio for 13¢/hr.

Circle 127 on Reader Service Card for Optimod-AM

Circle 129 on Reader Service Card for Optimod-TV

Circle 128 on Reader Service Card for Optimod-FM

www.americanradiohistory.com

THE MOVING PICTURE COMPANY ON CMX

John Beedle was one of the first staff members of the Moving Picture Company in London and is currently an editor, engineer and is on the Board of Directors. Fifteen years ago he started in the business with Pay Television, an experimental pay TV company in London. He got his first taste of editing doing "The Breakfast Show" for Television International and later set up and ran a video suite for Ewart Television, London, before joining MPC.

"Two years ago when we at MPC decided to expand our video editing facilities, our goal was to have the most efficient suite in London, marrying the new one-inch 'C' format technology with a flexible, reliable editing system. After much investigation, including a visit to the U.S., we chose the CMX 340X.

"This system has brought a new dimension to our editing capabilities and has been a winner with both our clients and editors. The system has most options fitted and is interfaced fully to the video switcher and by GPI to many peripherals such as additional SFX banks of the switcher, ¼-inch tape, telecines, and our multi-channel Quantel. Our sophisticated special effects work demands the kind of flexibility available with the 340X including the ability to delegate record and playback machines without repatching control cables.

"After a year of operation, due to growing business demands, we decided to install another edit suite. Again, we carefully examined the available editing system to see what was new. We bought another CMX. This second system enabled us to exploit another facet of 340X flexibility. We were now able to delegate machines from one system to the other as the specific job dictated. System one has three format 'C' VTR's and one quad interfaced. System two has three format 'C' and one format 'B' interfaced. With this mix and the ability to delegate, we haven't yet been caught out by the proliferation of formats, we just 'switch and mix' machines as required.

"Shortly we shall be looking to update our quad edit suites with 'the new technology.' Although we will again look carefully at the market place, it's reassuring to know that so far we have made the right choices with CMX."

CMX
ORROX
The World Standard for Editing

Orrox Corporation, 3303 Scott Blvd., Santa Clara, CA 95050 U.S.A. (408) 988-2000 TWX 910-338-0554

Circle 130 on Reader Service Card

www.americanradiohistory.com

Suite 3 to package its weekly national reel.

"Each week they send out a national reel that represents the best stories from all the participating stations," Schaeffer says, describing the *PM Magazine* operation. "That's all packaged here in San Francisco. They also use the Varitel editing suite for cutting their promotionals and for putting together some of the stories they originate in the national office." The 3/4-to-one-inch edit suite lets the *PM* crew take 3/4-inch edited master stories, plus visuals and other elements for the promo reel, and edit them all together directly to one-inch.

Convergence editing

The edit suite used by *PM Magazine* is built around a Convergence ECS-104 computer editor with programmable dissolves, wipes, fades, plus color correction, freeze frame, and downstream key. The editor, which prints out a CMX-compatible edit decision list, controls two Sony BVU-200 3/4-inch VTRs and a BVH-1100.

The 3/4-inch edit suites, each with three BVU-200s, have Convergence ECS-103 computer editors, also with programmable dissolves, wipes, fades, color correction, freeze frame, and downstream key with matte camera. The audio package includes a UREI graphic equalizer, notch filter, Otari reel-to-reel ATR, and Technics turntable (a similar audio package is found in the 3/4-to-one-inch suite).

"We first worked with Group W in December of '79 on a *PM* project because of our 3/4-inch editing capability," Schaeffer observes. "We've been able to maintain the relationship with them because our package of facilities meets their needs in a very efficient way."

Personnel savings

One of the major economies with 3/4-inch production and post-production is the savings in personnel, Schaeffer explains.

"In a traditional one-inch suite you have a tape operator—the tape machines might actually be located down the hall—plus you have the editor at the console. In the 3/4-inch suite, all you need is the editor. He loads his own tapes, his machines are right there, so it's more of a film-style edit, in a way." The personnel savings, along with the lower cost of renting or purchasing equipment and of tape stock, all add up to a more cost-effective operation.

Broadcasters are not the only ones producing magazine-style programs on 3/4-inch tape, though. Industrial use of 3/4-inch is old news, but Schaeffer reports that Varitel, originally set up to do broadcast work, is getting an increasing amount of business from companies desiring to produce high-quality, magazine-format productions for their employees.

"A lot of companies are looking to do magazine-format newsletters for in-house information because they find that people are reading less of the written material," notes Schaeffer. On the more positive side, it seems likely that companies are simply recognizing the effectiveness of video as a communications medium and seeking to utilize it in the best way possible. Varitel currently is doing such a project for Shaklee Corp., the natural products company, and Schaeffer says Standard Oil is considering something similar.

As Varitel's magazine-show clients illustrate, network-quality production and post-production is now possible entirely on 3/4-inch equipment. (Local stations, take note.) Those 3/4-inch recorders don't have to be limited to *just* the news. **BM/E**

Tried and True

Broadcasters have always been able to rely on Barco CM series utility color monitors to show true colors and picture noise. Now these same monitors offer even more with the addition of pulse cross and preset controls.

The CM-series monitors are now ideal for editing suites because they allow editors to match true colors. And the CM series never softens or masks noise. Editors see exactly what goes out on line in the preview mode.

In the U.S.
Elector U.S.
5128 Calle del Sol.
Santa Clara, CA 95050
Phone: 408/727 1506
Telex: 0236/0172335

In Canada
Electro & Optical Systems Ltd.
31 Progress Court.
Scarborough
Ontario M1G 3V5
Phone: 416/439 9333
Telex: 021/06525431

ELECTOR

And you can choose from medium, standard or high resolution delta dot tubes. All models are fully modular. The medium resolution CM-33 HRB offers a phosphor triad pitch of .43 millimeters and the CM-51 HRB .47 millimeters. Other features include switch selectable scan/overscan and an RG off switch for easy set-up.

The CM-33 HRB with pulse-cross is priced under $2500.

When you need to know, turn to BARCO. Our worldwide reputation for quality will enable you to enhance your image.

Available from ELECTOR, U.S. distributor of BARCO communications products.

BARCO

Circle 131 on Reader Service Card

www.americanradiohistory.com

Junkie with candle and hypodermic needles.
Taped by Jon Alpert.

Western Afghanistan villagers, during Soviet invasion.
Taped by Jon Alpert.

NOW GROWN ARE NO AFRAID OF

For years, newsmen have suffered from the recurrent nightmare of shooting in the dark. They've struggled with low-light situations where artificial lighting was either too intrusive or too difficult to achieve.

But now, thanks to the Sony BVP 330, the cover of darkness no longer stops reporters from covering a story.

The BVP 330 is used consistently in low-light situations by award-winning video journalists and documentary producers like Jon Alpert, Frank Beacham, and Warren Jones. It enables them to shoot under the worst

Sony is a registered trademark of the Sony Corp. © 1982 Sony Corp. of America, 9 W. 57th St., New York, N.Y. 10019.

www.americanradiohistory.com

Suspect in police custody.
Taped by Frank Beacham and Warren Jones.

Dade County Police questioning teenagers.
Taped by Frank Beacham and Warren Jones.

NEWSMEN LONGER THE DARK.

conditions, and capture elusive footage like the examples shown here.

The BVP 330 is so versatile in low-light situations, newsmen are surprised to learn that the camera is lightweight and sturdy enough to be taken into the jungles of Nicaragua. Or that its performance is good enough to enable it to be used as a studio camera.

But it makes sense that the BVP 330 should be this good. After all, when a reporter risks his life getting a story, the last thing he should have to worry about is losing it to darkness.

SONY
Broadcast

www.americanradiohistory.com

A DIGITAL EFFECTS SYSTEM SO ADVANCED, EVEN WE DON'T KNOW ALL IT CAN DO.

Maybe we'd better explain.

We do know the limits of our new E-FLEX DVE® system.

It's just that those limits are so theoretical, they have almost no impact on what E-FLEX can do in the studio.

And what it can do in the studio is virtually limitless.

To start with, E-FLEX has some of the most sophisticated effects ever offered in a digital video system. Like a new, two-channel reciprocal function. Our mosaic and posterization effects. Multi-move, so you can put up to 16 copies of a moving image on the same screen. And a trajectory function that lets you control the movement of an image along a curved path.

But E-FLEX is so advanced, you can also combine our "basic" effects in new, unheard-of ways. And this is where the theoretical limits come in. There are so many possible combinations, no one will ever know what they all look like.

That makes E-FLEX the most potent creative video tool ever. Every time you turn it on, you can create an effect no one has ever dreamed of. And when you've got what you want, you can store it permanently on a bubble memory cartridge that never wears out.

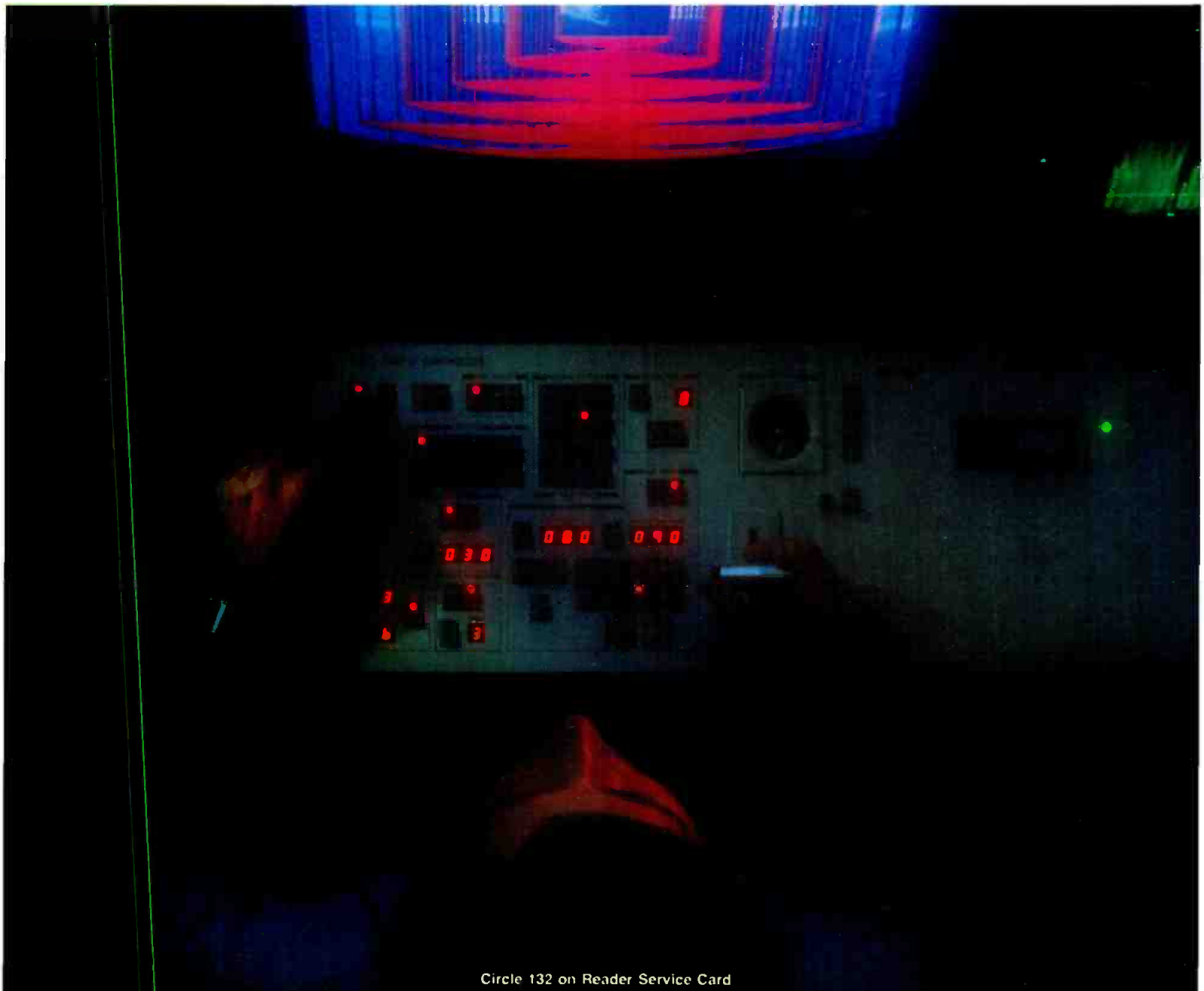
Yet while E-FLEX's capabilities may approach infinity, the price doesn't. It'll fit comfortably into your studio budget.

And that's all the more reason to call for a demonstration tape today. Because once you've seen a little of what E-FLEX can do, nothing will stop you from discovering the rest on your own.

NEC

IMAGINE WHAT WE'LL DO NEXT

NEC America, Inc. Broadcast Equipment Division, 130 Martin Lane, Elk Grove Village, IL 60007. Call toll-free 1-800-323-6656. In Illinois, 312-640-3792.



Circle 132 on Reader Service Card

www.americanradiohistory.com

BM/E'S VERIFIED BUYER'S GUIDE

THE SOURCE

HOW TO USE IT:

1. Instant Source Locator index ..... **p. 43**

To find suppliers of the product or service you want, first turn to the **Instant Source Locator**—an index of over 200 product types arranged in seven major categories: Audio; Video, Imaging; Lighting, Power, Support, Set Design, Etc.; RF, Transmitting/Receiving Equipment, Antennas, Towers; Test & Measurement, Logging, Timing; Components, Hardware; and Services. Within each main product category (they're arranged logically), you'll find manufacturers listed alphabetically. The star (★) indicates that the listing is verified—that the product or service is currently available. The numbers after the manufacturer's name refer to the specific types of product offered.

2. Alphabetical Listing of Manufacturers ..... **p. 61**

Once you've located the names of the manufacturers in the ISL, you can learn more details from the **Alphabetical Listing of Manufacturers.** Address and phone number are followed by a complete listing of the manufacturer's product line, plus, in some cases, the manufacturer's field offices. These listings are also verified.

3. Reps/Distributors Section ..... **p. 153**

Advertisers' reps and distributors throughout the country are listed in the **Reps/Distributors Section,** arranged alphabetically within each state.

4. Reader Service Card ..... **p. 225**

To get even more information about the products and services which are advertised in **THE SOURCE,** use the **Reader Service Card** inside the back cover. You can circle the Reader Service numbers for information on as many manufacturers as you like. And don't forget—the card is good for an entire year!

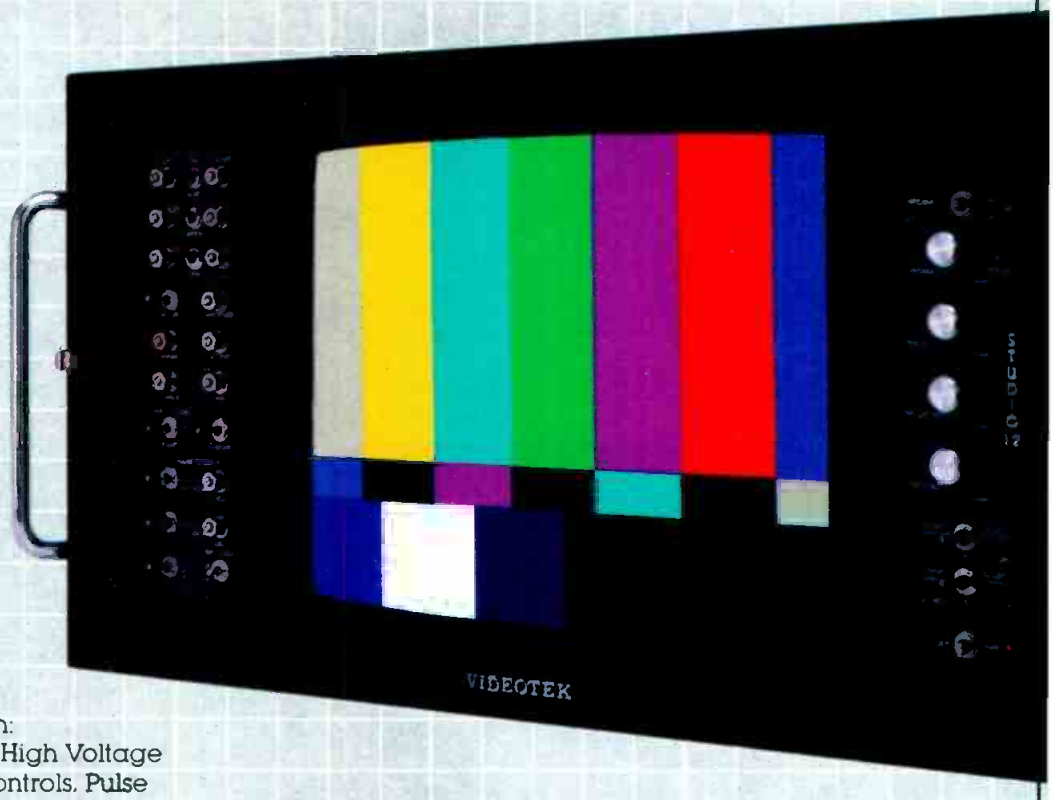
www.americanradiohistory.com

Progress by Design

Videotek's philosophy is to progressively design & refine the quality, function, and reliability of our products, and to provide equally aggressive service-after-the-sale.

Videotek's state-of-the-art TSM-5A Waveform Monitor and VSM-5A Vectorscope reflect this on-going commitment, with such innovative features as Internal Graticule CRT for precise parallax-free signal analysis, and Non-Glare Shields to eliminate distracting ambient light. TSM-5A also includes selectable 1H mode for easy one-line viewing, and 0.5 µs/div. scan rate for the most accurate time-base measurements.

Our popular Studio 12 picture monitor includes, as standard equipment, the features found on monitors costing twice as much: A-B Split Screen, Selective H-AFC, High Voltage Regulation, ACC-Defeat, Preset Controls, Pulse Cross, Underscan, External Sync plus more.



(all available in PAL standard.)

In only 7 years, Videotek has become an industry leader. We design and build more sizes and configurations of color monitors than anyone—worldwide! And our 1981 "Distinguished Video Industries Service Award" stands as a testimonial to our commitment to your needs.

Now that's Progress...by Design.

VIDEOTEK INC.

125 North York Street, Pottstown, PA 19464, (215) 327-2292, TWX: 710-653-0125 / 9625 North 21st Drive, Phoenix, AZ 85021, (602) 997-7523, TWX: 910-951-0621

Circle 133 on Reader Service Card

www.americanradiohistory.com

Instant Source Locator Index

AUDIO

CONSOLES

TYPES: mic mixers (1), portable consoles (2), mono studio consoles (3), stereo studio consoles (4), automated consoles (5), TV audio consoles (6)

SUPPLIERS: ADM (3,4,6)★; Ampro/Scully (3,4)★; Arrakis (1-4,6); Atlantic Research (2-6); Audioarts (2,3,4)★; Audio Processing (2-5); Audio-Technica (6)★; Audio Techniques (2-5)★; Audisar (1,2)★; Auditronics (3-6)★; Autogram (3-6)★; Broadcast Audio (3,4,6)★; Broadcast Electronics (3,4)★; Broadcast Technology (1-4,6)★; BSM (2,3); Cetec Broadcast (2,3,4,6)★; Coherent (1,2)★; Comprehensive Videa (1)★; Comrex (2)★; Continental Electronics (4)★; Crosspoint Latch (1,5)★; Datatranix (2-6); Dyma (2,3,4,6)★; Edcor (1)★; Eela (1-4,6)★; Elcom Bauer (3)★; Electro-Voice (1,2,4)★; Farrtronics (2)★; Finntek (1-4,6); Fostex (1,2,6)★; Gotham Audio (2,3,4,6); Gregg (3,4); Hallikainen (6)★; Harris Broadcast (1-5)★; Horrison (2-6)★; Howe (1,4,5,6)★; Image Devices (1); Industrial Research (1)★; Industrial Sciences (3)★; Integrated Sound (4)★; Interface Electronics (2); Listec (2)★; Logitek (2-6)★; Long; LPB (1,3,4,6)★; LTM (1)★; McCurdy (1,3,4,6)★; MCI/Sony (2-6)★; McMartin (1-4,6)★; Micro-Trak (1-4,6)★; Modular Audio (3,4,6)★; NEI (1-4)★; Neve (1-6)★; Nikko (3,4)★; Opamp (1-4,6)★; Pacific Recorders (4)★; Protech (3,4,6)★; Quad-Eight (3-6)★; Quantum (1-4,6)★; Ramko (1-4,6)★; Ramsa (2,3,4)★; Richmond Sound (1-4,6)★; RTS (1,2)★; Sescom (1)★; Shure (1,2)★; Solid State Logic (5)★; Sony (2)★; Soundcraft (2,4,5)★; Sound Dynamics (2); Spectra Sonics (1-4,6)★; Sphere (2-6)★; Studer Revox (1-4,6)★; Studiomaster (1-4,6)★; TEAC (3)★; Telfax (1)★; Transist-O-Sound (1)★; Trident (2-6)★; Tweed (1-6)★; Bayly (2)★; Ultro Audio (1,2,3,6)★; UMC (2,3,4)★; United Recording (2,4)★; Ward-Beck (2,3,4,6)★; Yamaha (1,2)★

CART PLAYERS/RECORDERS

TYPES: single deck (1), dual/triple deck (2), multideck (3), time delay (4), phase control matrixing (5)

SUPPLIERS: AKG (4)★; Amilan (1-4)★; Ampro/Scully (1,2,5)★; Audi-Cord (1,2,4)★; Bell Audio (1); Broadcast Electronics (1-4)★; Deltamod (5)★; Elcom Bauer (1)★; IGM (1,2,3)★; International Tapetronics (1,2,3)★; MacKenzie (1,2,3); Pacific Recorders (1,5)★; Ramko (1,2,5)★; Sono-Mag (1,3,4)★; Straight Wire (5)★; Telectro (1,2); Telex (1)★; UMC (1,2,3,5)★; Yamaha (4)★

CASSETTE PLAYER/RECORDERS

SUPPLIERS: Audiotronics★; Eumig★; Fostex★; Image Devices; Leader Broadcast★; Neal Ferrograph★; Nikko★; Odetics★; Pentagon★; Ramka★; Sonsui★; HH Scott; Sharp★; Studer Revax★; Studiomaster★; Superscope★; Tandberg★; TEAC★; Technics★; Telectra; Tiffen★

OPEN-REEL DECKS

TYPES: portable ATRs (1), 2,4-track decks (2), multitrack ATRs (3), time delay decks (4)

SUPPLIERS: Ampex (1,2,3)★; Ampro/Scully (2,3)★; Cavax (1,2); Fostex (2,3,4)★; Gotham Audio (1,2,3); International Tapetronics (2)★; Leader Broadcast (1-4)★; MCI/Sony (2,3)★; Nagra (1,2)★; Otari (1,2,3)★; Ramko (2)★; Scully (2)★; Soundcraft (3)★; Sound Dynamics (2); Stephens (1,2,3)★; Studer Revox (1,2,3)★; Tandberg (1,2)★; TEAC (2)★; Technics (2)★; Telex (2)★; United Research (2)★

DIGITAL AUDIO RECORDERS

TYPES: fixed head/open reel (1), digital adaptar/video recorder (2), cassette recorder (3)

SUPPLIERS: 3M (1)★; Mitsubishi (1,2)★; Odetics (1)★; Sonsui (3)★; Sony (1)★

TAPE DUPLICATORS

SUPPLIERS: Accurate Sound★; Audio/Tek★; Cetec Gauss; Dynacam; Electra Sound★; Garner★; Nagra; Odetics★; Otari★; Pentagon★; RKO Tape; Sharp★; Telectra; Telex★

SPROCKETED MAGNETIC FILM TRANSPORTS, DUBBERS

SUPPLIERS: Bach Auricon★; Leader Broadcast★; Magnasync/Moviola★; Magna-Tech★; Multi-Track★; Rangertone; Rank Precision★; Wide Range★

HEADS, ACCESSORIES

TYPES: replacement heads (1), rebuilt heads (2), head cleaners, degaussers (3), alignment, tension gauges (4)

SUPPLIERS: Ampex (1,2)★; Allsop (1,2)★; R.B. Annis (3)★; Audio Techniques (1,3,4)★; Broadcast Electronics (8,9)★; Electro Sound (1,4)★; Fidelipac (4)★; International ElectroMagnetics (1,2)★; JRF (1,2)★; Lauderdale (4)★; Leader Broadcast (1,2,3,4)★; Marathon (3)★; Memorex (3)★; Microtran (3); Minneapolis Magnetics (1)★; Multi-Track (1,4)★; Nagra (1,3)★; Nortronics (1,3,4)★; Pentagon (4)★; Ramko (1)★; Rangertone (1); RE:dB (1,2)★; Soki (1)★; Sound Dynamics (2); Taber (1)★; TEAC (3)★; Tentel (4)★; Texwipe (3)★; UMC (1,4)★; United Research (1)★; Wide Range (3)★

AUDIO TAPE, ACCESSORIES

TYPES: open-reel tape (1), carts (2), cassettes (3), test tapes (4), sprocketed magnetic film (5), empty reels, carts (6), leader tape (7), tape loaders (8), tape timers, rewinders (9), bulk erasers (10), conveyor erasers (11), tape cleaners, evaluators (12), other (13)

SUPPLIERS: Agfa-Gevaert (1,3)★; Ampex (1-4,6,7)★; R.B. Annis (10)★; Aristocart (2,4,6)★; Audico (8,9)★; BASF (1,3,4)★; Broadcast Cart (2,6)★; Calzone (6)★; Capitol (2)★; Deltamod (4)★; Dictaphone (1,6)★; Electro Sound (3,4,8)★; Fidelipac (2,4,6,10,12)★; Fluxcom (10)★; Garner (10)★; Gruver (3); Inovonics (13)★; International Tapetronics (2)★; Kazin (1,3,6,7)★; Lauderdale (10,12); 3M (1,2,3,5-8)★; Magnasync/Moviola (10)★; Magnetic Reference (4)★; Marathon (2,4,12,13)★; Memorex (2,3)★; Microtran (10); Nagra (4)★; Neumade (2,5,6,8,9); Nortronics (10,12)★; Odetics (3,10)★; PDM (3)★; Pentagan (9)★; Plastic Reel (6)★; Polyline (3,6); Procart (2)★; Ramka (2,8)★; Recortec (3,12)★; RKO Tape (1,3); Smith-Victor (3)★; Sonar (10)★; Standard Tape (4)★; Taber (10)★; Tapex (2,3,4)★; TDK (1,3,4)★; Telex (4)★; UMC (10, splice finder)★; Wallach (2,6)★; Wide Range (10)★

EDITING EQUIPMENT, ACCESSORIES

TYPES: splicing blocks, tape (1), electronic editars (2), digital audio editars (3), SMPTE time code synchranizers (4), other (5)

SUPPLIERS: Adams-Smith (4)★; Audio Kinetics (2,4)★; Basch (2)★; BTX (2,4)★; Control Video (2,4)★; Datum (4,5)★; EECO (2,4)★; Electro Sound (1)★; F&B/Ceco (1)★; Fidelipac (1)★; Harris Broadcast (2)★; Interactive (2,4)★; Jatex (2)★; Kalart Victar (1,5)★; Lauderdale (1); Leader Broadcast (4)★; Marathon (1)★; MCI/Sony (4)★; Multi-Track (4)★; Neve (3)★; Plastic Reel (1)★; Quad-Eight (3)★; Redding Radia (5); Solid State Logic (4)★; Stephens (1,4)★; Studer Revox (4)★; United Media (2,4, ADR cantroller)★; Videamedia (2)★; Xedit (1)★

★ MEANS IT'S VERIFIED

DISC PLAYING EQUIPMENT

TYPES: turntables (1), pickup arms (2), phono cartridges (3), phono preamps (4), complete disc consoles (5), record cleaning, care (6)

SUPPLIERS: AKG (3)★; Allsop (6)★; Astatic (2,3); Audio Technologies (4)★; Audio-Technica (2,3,6)★; Audionics (4)★; Audisar (4)★; Broadcast Electronics (1,2,4)★; Cetec Broadcast (1,2)★; Fidelipac (2,3)★; Gotham Audio (1,2,3,5); Gregg (4); Harris Broadcast (1)★; Integrated Sound (1,5)★; Lauderdale (6); Logitek (4)★; LPB (1,2)★; McCurdy (1)★; Micro-Trak (1,2,4,5)★; Keith Manks (6)★; Nikka (1); Opamp (4)★; Radio Systems (4)★; Ramko (1,4)★; Richmond Sound (4)★; RTS (4)★; Sharp★; Shure (2,3)★; Stanton (3,4,6)★; Straight Wire (4)★; Studer Revox (1)★; Technics (1)★

www.americanradiohistory.com

PROGRAM, BUSINESS AUTOMATION

TYPES:
relay sequencers (1)
time insertion sequencers (2)
computer consoles (3)
complete program automation systems (4)
auto time, weather announce (5)
radio business automation systems (6)
radio newsroom computers (7)

SUPPLIERS: Applelog (6); Automated Broadcost (4,6); Automated Business Concepts (6)★; Basys (7)★; Broadcast Electronics (4)★; Codo (6)★; Cavox (1,2,4,5); Cetec Broadcast (2-6)★; Channelmotic (1,2,3); Clarcomputer (4); Columbine (4)★; Camputer Business (6); Computer Concepts (4,6,7)★; Computer Management (4,6); Conex (4); Control Technology (1-5); Cross (6); Custom Business (6)★; Data Comm. (6)★; Di-Tech (3)★; Generic (6); Groton (4,6)★; Hallikainen (5)★; Harris Broadcast (2,4-7)★; Harrison (4); Hewlett-Packard (6)★; IGM (2-5)★; Interface Data (2,3,4,6,7)★; Jefferson Data (6,7)★; Jenel (4); Kaman (4,6,7)★; Libra (6); The Monogement (6)★; Marketron (6); Microprobe (2,3,6)★; Nidus (3,4,6)★; Quanta (7)★; Rodiocom (6)★; Register Data (6)★; Sharepoint (3)★; Sono-Mag (3,4)★; Southwestern (6)★; Spectrum (6)★; Station Business (6)★; UMC (4)★; Valley People (4)★

AUDIO PROCESSING, EFFECTS

TYPES:
ALC, AGC amps (1)
AM compressor/limiters (2)
FM compressor/limiters (3)
parametric equalizers (4)
graphic equalizers (5)
digital special efx (6)
digital delay, reverb (7)
analog special efx, reverb (8)
mechanical reverb (9)
audio/video sync delay (10)
time compression/exponsion (11)
noise reduction (12)
music synthesizers (13)
other (de-essers, etc.) (14)

SUPPLIERS: Advanced Music (6,7,8,10,11)★; Advancing Technology (1,2,3)★; AKG (7,8)★; Altec Lonsing (5)★; Aphex (3,4,14)★; Ashly (3,4,12)★; Atlantic Research (2-5); Audio Technologies (1-4,12)★; Audio Technology (12); Audio Processing (4,5); Audionics (14)★; Audio + Design (1-5,8,12,14)★; Audioarts (3,4,5)★; Audisar (4,5); Broadcast Electronics (2,3)★; Broadcast Technology (5,7,8,10)★; Comex (7)★; Comrex (1)★; CRL (2,3,12); Datatronix (2-5); dbx (1-4,6,12)★; Delta Electronics (1,2)★; Deltamad (12)★; Dolby (12)★; Dyma (4,5,8)★; Elcom Bauer (1,2,3)★; Electro-Voice (5,8,9)★; ESC (14); Eventide (1,6,7, 11,14)★; EXR (14)★; Fostex (4,5,8,12)★; Frequency Devices (4,5,12); Gotham Audio (2,3,7,8,9,12); Gregg (1,2,3,14); Harris Broadcast (1,2,3)★; Harrison (5)★; Howe (14)★; Industrial Reseorch (6,10)★; Inovonics (1,2,3,12)★; Integrated Sound (5,11)★; International ElectroMagnetics (5)★; Ivie (5,7)★; Kahn (2)★; Lear Siegler (2,3,5); Lexicon (6,7,10, 11)★; LPB (2,3)★; Marcom (2,3)★; McCurdy (2,4)★; MCI/Quantel (10)★; McMartin (1,2,3,5)★; MicMix (9,12)★; Klark-Teknik (5,6,8,9)★; Koss (7); Marti (1,2,3)★; Modular Audio (2,5)★; Moog (13)★; Moseley (1,2,3)★; MXR (3,5-8,14)★; NEI (4,5,8,9)★; Nikko (4,5); Opamp (1,5,9,13)★; Orban (2-5,14)★; Protech (1,2)★; Quad-Eight (2,4,5,7, 8,9)★; Ramko (2)★; Richmond Sound (1,4,5)★; Sansui (5)★; Ken Schaffer (6,7,11)★; Sescom (1,4)★; Shure (2,5)★; Spectra Sonics (1,2,3,5,8)★; Straight Wire (12)★; Superex (4); Symetrix (2,3,4)★; TEAC (5)★; Thomson-CSF (1,2,3, presence EQ)★; Trident (4,6,7,8, 11)★; Tweed (2-5,12)★; United Recording (1-5,12)★; Ursa Major (6,7)★; Valley People (1-4,12)★; Word-Beck (1,4)★; Wavetek (5); White (5); Yamaha (5,8)★

★ MEANS IT'S VERIFIED

AUDIO MONITORS

TYPES:
speakers (1)
headphones (2)

SUPPLIERS: Acoustic Research (1)★; AKG (2)★; Altec Lansing (1)★; Atlos Sound (1)★; Audio Techniques (1,2)★; Audio-Technica (2)★; Audisar (1); Auernheimer (1)★; Auratone (1)★; Beyer (2)★; Broadcast Technology (2)★; Cetec Gauss; David Clark (2); Clear-Com (2)★; Dorrough (2,3); Electro-Voice (1)★; Fostex (1)★; Gotham Audio (1); Integrated Sound (1)★; Koss (1,2)★; Lonsing (1)★; McKoy Dymek (1)★; Micro-Trak (1)★; Ramko (1)★; Sennheiser (2)★; Setcom (2); Sharp (1)★; Shure (1,2)★; Sony (2)★; Spectro Sonics (1)★; Stanton (2)★; Studer Revox (1)★; Superex (2); Telectro (1); TEA (2)★; Telex (2)★; United Recording (1)★; V.A.M.P. (1)★; Vidaire (2)★; Westlake (1)★; Yamaha (1)★

INTERCOM SYSTEMS

TYPES:
RF (1)
hardwired (2)

SUPPLIERS Cetec Vega (1)★; David Clark (2); Cleor-Com (2)★; Coherent Comm. (1)★; Comrex (1)★; Edcor (1)★; Farrtronics (2)★; Fisher Berkeley (2); HME (1)★; Lear Siegler (2); Long; Marshall Elect. (6,7,8,10,11)★; McCurdy (2)★; McMartin (2)★; Minicom (2)★; Motorola (1)★; Nady (1)★; Protech (2)★; R-Columbia (1,2)★; ROH★; RTS (2)★; Ken Schaffer (1)★; Setcom (2); Swintek (1)★; TEA (2)★; Telex (2)★; Theatre Techniques (2)★; TVI (2); Tweed (2)★; Vidaire (1)★; Video Aids (2)★

MICROPHONES

TYPES:
dynamic (1)
electret/condenser (2)
ribbon (3)
PZM (4)
RF (5)
shotgun (6)
lavalier (7)
capsular, modular (8)
mic stands, booms, dollies (9)

SUPPLIERS: AKG (1,2,6-9)★; Altec Lansing (1,2,7,9)★; Astatic (1,2,7,9); Atlos Sound (9)★; Audio-Technica (1,2,6,7)★; Beyer (1,2,3,5-9)★; Bruel & Kjaer (2)★; Calrec (2,8)★; Cetec Vega (5)★; Coherent (2,5,7)★; Comrex (5)★; Countryman (2,7,8)★; Dymo (1)★; Edcor (1,5,7)★; Electro-Voice (1,2,6-9)★; F&B/Ceco (9)★; Fidelipac (1,2,6,7,9)★; Alan Gordon (5)★; Gotham Audio (2,6,9); HME (5)★; Image Devices (2); Integrated Sound (1,2,6)★; Lauderdale (9); Leader Broadcost (1,2,3,5-9)★; LTM (9)★; Marti (1)★; Mothews (9)★; Micron (2,5,7)★; Keith Monks (9)★; Nady (5)★; Odetics (1,2,9)★; Ramso (1,2)★; R-Columbia (1,2)★; RMS (1); Ken Schaffer (5)★; Sennheiser (1,2,5-9)★; Shure (1,2,3,7,9)★; Sony (1,2,5-8)★; Superscope (2)★; Swintek (5,7)★; TEA (1,2)★; TEAC (1,2)★; Telex (1,2,7)★; Vidaire (1,2)★

TELCO INTERFACE EQUIPMENT

SUPPLIERS: Audio Acc.★; Audisar; Broadcast Electronics★; Comrex★; Gregg; Howe★; Monroe★; Old Dominion★; Redding Radio; RTS★; Sound Dynamics; Studer Revox★; Symetrix★; Telfax★

AUDIO AMPLIFIERS

TYPES:
preamps (1)
line amps (2)
monitor, power amps (3)
audio DAs (4)
amp power supplies (5)

SUPPLIERS: ADM (4)★; Allied Bdcst. (1,4)★; Altec Lansing (1,2,3)★; Arrakis (1,3,4,5); Atlantic Research (1-4); Audia Technologies (1-5)★; Audionics (3)★; Audio + Design (1,4)★; Audisar (1-4); Auditronics (1,2,4)★; AVL Digital (3,4)★; Bell Audio (1,2,4); BGW (3)★; Bonneville (2,4)★; Bosch (1,3,4)★; Broadcast Audio (3,4)★; Broadcast Electronics (1-4)★; Broadcast Technology (1-5)★; Bryston (1,3)★; BSM (4); Calrec (1)★; Central Dynamics (1-5)★; Channelmatic (4); Commerce Air (4); Conex (3,4); Datatek (1-4)★; Dotatronix (1-5); Datum (2)★; Di-Tech (4)★; Dymo (1,2,3)★; Dynair (1,4)★; Edcor (1,2,3)★; Electro-Voice (2,3)★; Eumig (1,2,3,5)★; Frequency Devices (5); Graham-Patten (4)★; Heath (1,3); Hedco (2,4)★; Hewlett-Packard (1,2)★; IGM (4)★; Integrated Sound (3)★; International Nuclear (1,5); ITI (1,2,3,5)★; Ivie (1,3)★; Kahn (2)★; Lansing (2,3)★; Louderdale (1,4); Lear Siegler (1,2,3); Logitek (1,3,4)★; Marti (2,3)★; McCurdy (2-5)★; McMartin (1,2,3)★; Micro-Trok (1-4)★; Milan (4)★; Modular Audio (1-5)★; Multidyne (1,2,4)★; MXR (1)★; Neve (2,4)★; Nikko (1,3); Opamp (1-5)★; Pacific Recorders (4)★; Protech (1-5)★; QSC (3)★; Quad-Eight (1,2)★; Radio Systems (3,4)★; Ramko (1-5)★; Ramsa (3)★; Rangertone (1,2); Richmond Sound (1,2,4,5)★; ROH (1-4)★; RTS (1-5)★; Russco (1,3,4)★; Scientific Syst. (4)★; Sescom (1,2,3,5)★; Sharp (1,2,3)★; Shintron (4)★; Shure (1,3)★; Sigma (4)★; Spectra Sonics (1-5)★; Sphere (1,2,3)★; Stanton (1)★; Straight Wire (1-5)★; Studer Revox (3)★; Studiomaster (3)★; Symetrix (3)★; Taber (1,2,6)★; Tandberg (1,3)★; TEAC (1,5)★; Telemet (3,4); TEA (4)★; Telfax (2)★; Thomson-CSF (4)★; TM Systems (2,5)★; Tweed (1-5)★; Bayly (1-4)★; Circuit Devel. (3)★; Ultra Audio (3,4)★; United Recording (1,3)★; Valley People (1,2)★; Vomco (4)★; Versa Count (4); Vital (4)★; Word-Beck (1-5)★; World Video (3)★; Yamaha (3)★

AUDIO CONTROLS

TYPES:
rotary attenuators (1)
slide attenuators (2)

SUPPLIERS: Atlantic Research (2); Datatronix (2); Duncan Electronics (2); Opamps (1,2)★; Penny & Giles (1,2)★; Protech (2)★; ROH★; Sescom (1,2)★; Shallco (1,2)★; Spectra Sonics (1,2)★; Tech Labs (1,2)★; United Recording (2)★; Vidaire (1)★; Waters (1,2)★

AUDIO LEVEL INDICATORS

TYPES:
VU (1)
PPM (2)
video monitor display (3)
LED, other (4)

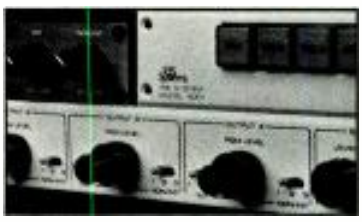
SUPPLIERS: ADM (2)★; Advancing Technology (1,2)★; Arrakis (1,4); Audio Technologies (1)★; Audio Technology (1,2,4); Audio Processing (1,2); Audio + Design (1,2,4)★; Broadcast Technology (1,2,4)★; Dorrough (4); ESE (4)★; Gotham Audio (2,3,4); Horrison (1-4)★; Inovonics (2)★; Leader Bdcst. (1,2)★; Logitek (1,2,4)★; McCurdy (2)★; McMartin (1)★; Opamp (1)★; Quad Eight (4)★; Ramko (4)★; Rangertone (1); Real World (1,2,3)★; Scott (1,2); Spectra Sonics (1)★; Telemet (1); TM Systems (1)★; Word-Beck (1)★; Weston (1-4)★

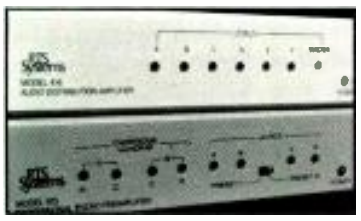
www.americanradiohistory.com

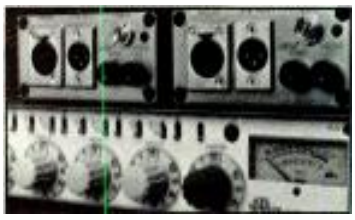
The RTS Advantage

Professional intercommunication and audio products with the advantage of innovative designs tailored to fit your everyday operations. TW INTERCOM SYSTEM Our high performance conference-line intercom allows an almost infinite variety of system configurations from a choice of over 30 individual components. Unique patented circuitry provides clear and clean two-way communication for up to 75 stations. The system is designed for teleproduction and broadcast applications as well as industrial and commercial installations.

SERIES 800 Multi-function master stations designed to augment the TW Intercom System. Our Model 801 provides six conference-line intercom channels with separate talk and listen switches, four IFB/SA circuits, and many other features. The new, microprocessor assisted, Model 802 provides broad spectrum operational capabilities with front panel programming for varying production requirements. An impressive array of functions are available, including intercom, squawk, IFB/SA, station-iso, signaling, etc. SERIES 4000 IFB SYSTEM This program interrupt system is widely used to cue "ON-AIR" talent from up to four control stations, each with dedicated priority levels. A modular format allows for custom configuration and easy expansion for up to twelve IFB outputs. SYSTEM 2500 CARD CAGE AMPLIFIER SYSTEM Our high density packaging system allows for up to ten circuit cards in only 3½" of rack space. Initially available is the Model 2510 1 × 6 Audio Distribution Amplifier with fully balanced transformer outputs and top rated performance specifications. SERIES 1000 INTERCOM Our ten by ten dedicated line all master "squawk" system provides direct point-to-point voice communication, with tally between stations. SERIES 400 A versatile line of amplifiers designed to meet professional audio needs: Phono Preamp, Mic Preamp, Buffer Amp, 1 × 4 Audio DA, 1 × 6 Audio DA, and Monitor Amp. Each unit offers top performance in a low profile portable or rack mount package. HPM—41 MICROPHONE MIXER This is no ordinary mic mixer. It's a familiar looking package with extraordinary performance features, super spec's, and great sound. Equally impressive, our rugged, battery powered Model 1400 In-Line Microphone Preamplifier boosts any mic signal to line level.







RTS Systems

Professional Intercommunications • Professional Audio Products

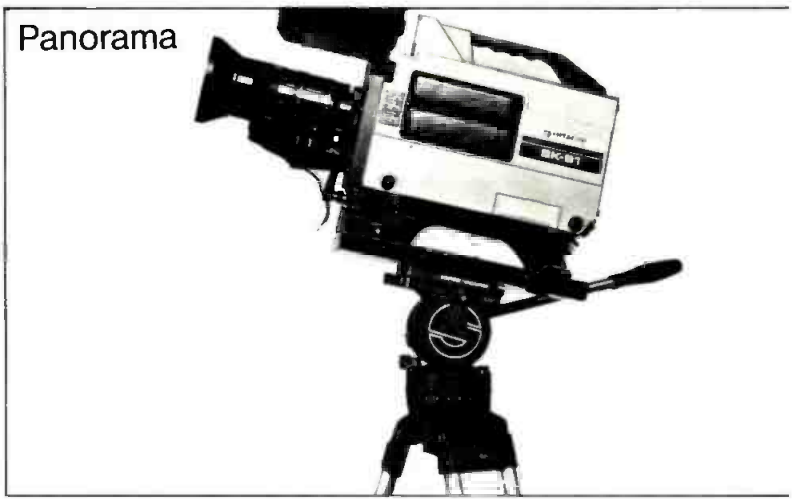
1100 WEST CHESTNUT STREET, BURBANK, CA 91506
213/843-7022 • TWX 910-498-4987 • TELEX 194855

A SUBSIDIARY OF COMPACT VIDEO, INC

Circle 134 on Reader Service Card

www.americanradiohistory.com

sachtler



THE PERFECT HEADLINE

for your ENG- or EFP-camera

sachtler
camera supporting systems

offering

Dial-in – up to seven – steps of drag, independently adjustable for pan and tilt,

built in compensation for center of gravity displacements,

camera-adequate or dynamic counter-balancing, adjustable on the spot for all your possible requirements,

extreme positive, operational locks, not effecting camera orientation when operated,

a leak-proof by design fluid system with guaranteed (for years) trouble free operation,

an all-in-one piece unit for easy handling and transport,

that is available when and where you need it worldwide.

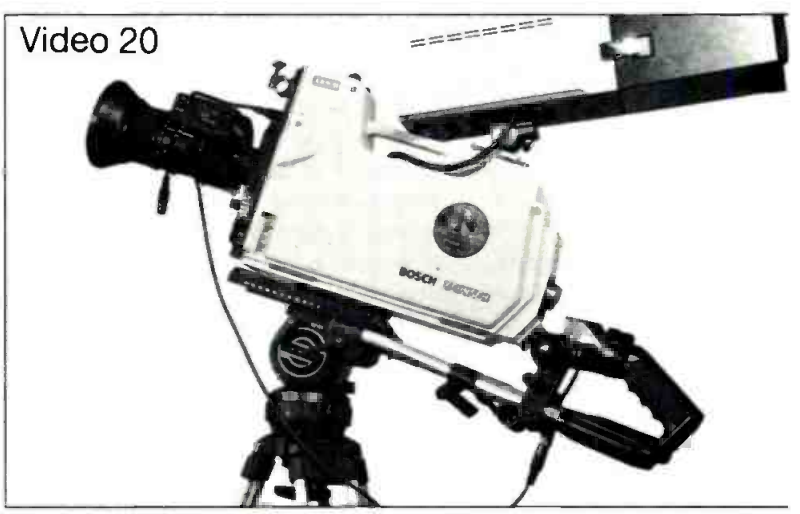
Its the Sachtler headline offering all these features, dont ask for less!

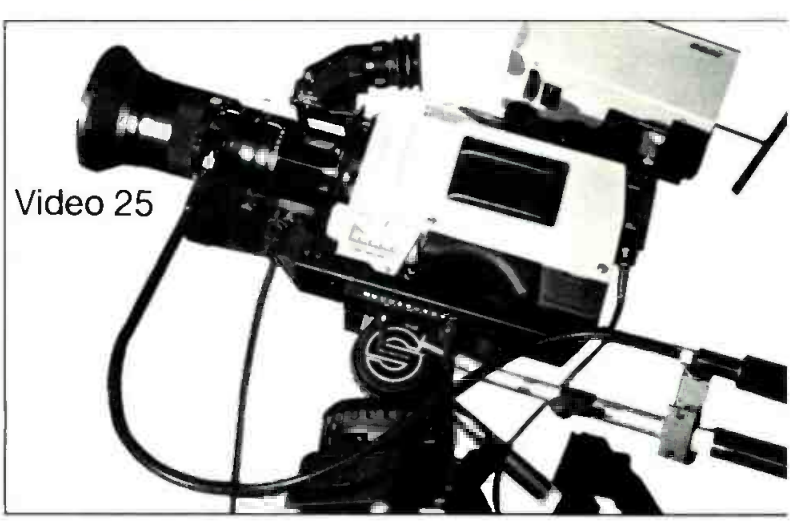
Call on your nearest Sachtler dealer

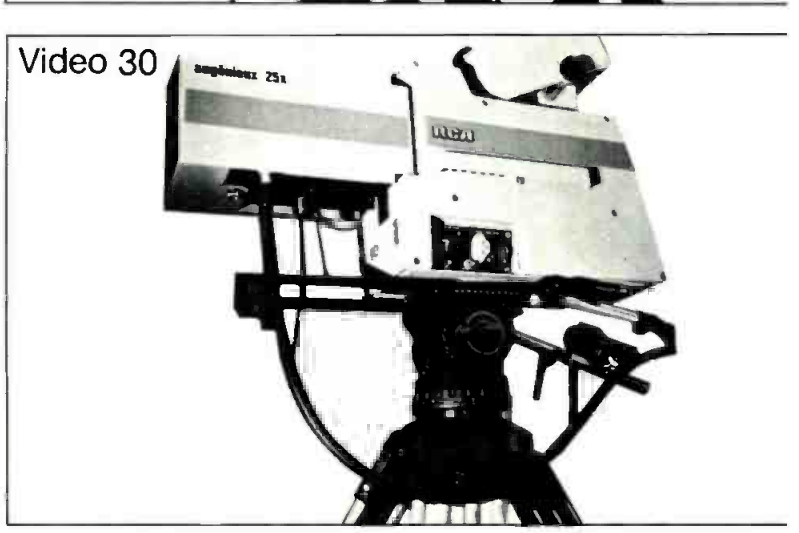
or write to

Sachtler Corporation of America
400 Oser Avenue, Hauppauge NY 1178/8
Phone (516) 2 31 00 33, Tx 140170,

a subsidiary of Sachtler GmbH
Dieselstr. 16
D-8046 Garching/München
Phone (89) 3 20 40 41, Telex 5 215 340







www.americanradiohistory.com

OTHER AUDIO, RADIO EQUIPMENT

TYPES: audio patch panels (1); soundproofing material (2); EBS two-tone systems (3); other (4)

SUPPLIERS: ADC (1)★; ADM (1)★; Alpha Audio (2)★; Atlantic Research (1); Audio Technologies (1)★; Audio Acc. (1)★; Audisar; Broadcast Technology (1)★; Datatronix (1); Emergency Alert (3)★; Farrtronics (1)★; Gorman-Redlich (3,4)★; Hedco (4)★; International Nuclear (3); Jenel (1); Jahnson (3)★; Lemo (1)★; McCurdy (1,4)★; McMartin (3)★; Ramko (4)★; RTS (4)★; Sescom (1)★; Sphere (1)★; Symetrix (1)★; TFT (3)★; Trompeter (1)★; Tweed (1)★; Word-Beck (1)★; Wireworks (1)★; World Video (4)★

VIDEO, IMAGING

CAMERAS

TYPES: studia (30 mm tubes) (1); field (25 mm tubes) (2); ENG/EFP (18 mm tubes) (3); lightweight (13 mm tubes) (4); single-tube cameras (5); recorder/camera combos (6); monochrame cameras (7); solid state cameras (8)

SUPPLIERS: Ampex (1,3,6)★; Arriflex (8)★; Asaca (7)★; Boch Auricon (8)★; Birns & Sawyer (8)★; Bosch (1,2,3,6)★; Camera Mart (3,8)★; CEI (2,3)★; Central Dynamics (1,2,3)★; Cinemo Products (3,8)★; Eumig (8)★; GBC (7); Harris Broadcast (1,2,4,9)★; Hitachi (1-7,9)★; Ikegami (1,2,3,6,7,8)★; Javelin (7); JVC (3,4,5)★; Marconi (1)★; NEC (3)★; Panasonic (2,3,5,6,7)★; RCA Commercial (1,2,3,6)★; Sea-Cam (3)★; Sharp (3,5,7)★; Sony (1,2,3,5,6)★; Teledyne (9)★;Thomson-CSF (1,2,3,4)★; Toshiba (1,3)★; Tritronics (motion analysis)★; Westinghouse (5,7)★

CAMERA COMPONENTS

TYPES: lenses (1); lens extenders (2); filters (3); pickup tubes (4); standalone microprocessor CCUs (5)

SUPPLIERS: Amperex (4)★; Angenieux (1,2)★; Anton/Bauer (5)★; Calvert (4)★; Canon (1,2)★; CEI (1)★; Century Precision (1,2); Cinema Products (1)★; F&B/Ceco (1,3)★; Film/Video Equip. (2)★; Fujinan (1,2)★; GBC (1,2); Ikegami (1-5)★; Javelin (1,2); JVC (1,2)★; Lenzar (1); Panasonic (1)★; RCA EO&D (4)★; RCA Solid State (4)★; Schneider (1,2)★; Warren R. Smith (1)★; Sony (5)★; Tele-Cine (1,2,3)★; Thamson-CSF (4)★; Tiffen (3)★; Tritronics (1)★; Zei-Mark (1)★; Zoomar (1)

VTRs, VCRs

TYPES: quad (1); one-inch B (2); one-inch C (3); U-type VCR (4); pro beta VCR (5); pro VHS HCR (6); recorder/camera combo (7); video cart/cassette automation system (8)

SUPPLIERS: AF Assoc. (3)★; Ampex (1,3,7,8)★; Bosch (7,8)★; Colico Video (8)★; Central Dynamics (3)★; Channelmatic (8); CMC (1,3)★; Delcom (4)★; Hitachi (3,6,7)★; JVC (4,6)★; Lake (8)★; 3M (3)★; Marconi (3)★; Media Concepts (6,8)★; Merlin (1,2,3)★; Odetics (8)★; Panasonic (4,6,7)★; Phasecom (8)★; RCA (1,3,7,8)★; Recortec (4,8)★; Sharp (6)★; Sony (3,4,5,7)★; Tech Elect. (8)★; Techtran (port. ¼-inch)★

VIDEO HEADS, ACCESSORIES

TYPES: replacement heads (1); rebuilt heads (2); VTR rebuilding service (3); head cleaners, degaussers (4); alignment, tension gauges (5)

SUPPLIERS: AF Assoc. (3)★; Ampex (1,2,3,4)★; Allsop (4)★; R.B. Annis (4)★; CMC (1,2,3)★; Glentronix (2)★; Lauderdale (4); Merlin (3)★; Minneapolis Mag. (1,3)★; Nortronics (1,4,5)★; Rangertone (1,3); RCA Commercial (1,2,3)★; Saki (1)★; Spin Physics (1,3)★; Taber (1,3)★; Tentel (5)★; Texwipe (4)★; Videomagnetics (1,2)★

VIDEOTAPE, FILM, ACCESSORIES

TYPES: two-inch tape (1); one-inch tape (2); ¾-inch tape (3); ½-inch tape (4); film stock (5); tape, film cleaners & evaluators (6); bulk erasers (7); tape loaders (8); empty reels, contoiners (9); other (10)

SUPPLIERS: Agfa-Gevaert (3,4,5)★; Ampex (1-4,9)★; Allsap (6)★; R.B. Annis (7)★; Asaca (6)★; Audico (6,8)★; BASF (4)★; Calico Video (8)★; Calzone (9)★; Eastman Kodak (5)★; Environmental (9); Fidelipac (7)★; Fuji (1-4,10)★; Garner (7)★; JVC (4)★; Lauderdale (7); 3M (1-6,8,9)★; Memorex (4)★; Nortronics (7)★; N.O.V.A. (6)★; Otari (8)★; Panasonic (3,4)★; PDM (4)★; Plastic Reel (9)★; Polyline (9); Quanto (6)★; Recortec (6)★; Re-Play (10)★; RKO Tape (4); RTI (6)★; Sawyer (8,9); Smith-Victor (4)★; Sonar (7)★; Sony (2,3,4)★; Studio Film★; Superex (7); Taber (7,9)★; TDK (4,6)★; Wide Range (7)★

SLOW MOTION RECORDERS

TYPES: disc action recorder (1); video animatian controller (2); slow-ma recarder (3); VTR slow-mo controller (4)

SUPPLIERS: Ampex (4)★; Animation Video (2)★; Aurora (2)★; Computer Ops. (2); Convergence (2)★; Eigen (1,2)★; Grove (2)★; Hitachi (4)★; Interand (2)★; Lyon Lamb (2)★; 3M (4)★; MPB (2)★; Oktel (1,2); RCA Commercial (4)★; Sony (4)★

TELECINES, FILM EQUIPMENT

TYPES: solid state telecines (1); telecine cameras (2); 16/35 mm film projectors (3); 35 mm slide projectors (4); optical multiplexers (5); sprocketed film transports (6); telecine calor carrector (7); auto light control (8)

SUPPLIERS: AF Assoc. (1)★; Bell & Howell (3,4)★; Beston (3)★; Basch (1,5,7)★; Buhl (4,5); CEI (2)★; Corparote Comm. (7)★; Dubner (7)★; Eastman Kodak (3)★; Fairchild (1); Alan Gordon (4)★; Hitachi (2)★; Ikegami (2,7)★; Kalart Victor (3,5)★; KB (6); Laird (3,4,5)★; L-W (3)★; Magnasync/Moviola (3,6,7)★; Magno-Tech (3,6)★; Marconi (1,7)★; Multi-Track (3,6)★; North Hills (1)★; Nytone (3,5,7); W.A. Palmer (3)★; Radmor (3)★; Rangertone (3,5,6); Ronk Precision (2,3,4,7)★; RCA Commercial (2-5,7)★; Singer Ed. (3,4)★; Spindler & Sauppe (4)★; Teledyne (video-to-film)★; Tritronics (5)★; Wide Range (6)★; Zei-Mark (3,4,5)★

★ MEANS IT'S VERIFIED

ELECTRONIC ART, GRAPHICS

TYPES: character generators (1); character generator/framestores (2); digital art/paint systems (3); digital still stores (4); bit pad digitizers (5); camera/VTR digitizers (6); weather symbol inserters (7); "draw-on-screen" systems (8)

SUPPLIERS: ADDA (4)★; Ampex (4)★; Apert-Herzog (4)★; Aurora (3,6,7)★; Barda (1)★; Beston (1)★; Bosch (1,4)★; British Videotex (1); Chyran (1,2,3,5,7,8)★; Colorado Video (4)★; Colorgraphics (3,8); Comprehensive Video (1)★; Computer Graphics Lab (3,6,8)★; Computer Video (1); Datum (1)★; Dubner (1,3,4-8)★; EEG (1)★; For-A (1,8)★; Grove (1,2,3,6)★; Harris Broadcast (4)★; Harris Video (4)★; Interand (3,5,7,8)★; Knox (1)★; Laird (1)★; Logica (3)★; 3M (1,6)★; MCI/Quantel (1-4)★; MPB (1)★; Newscan (1,3,7)★; QSI (1)★; Quanta (1,5)★; Ramtek (3)★; Shintron (1)★; Spectra (3,7)★; Texscan (1,8); Thalner (1)★; Thomson-CSF (1,2,5,7)★; Via Video (3,6)★; Video Assoc. (1)★; Video Data (1)★; Weatherscon (7)★; Xiphias (3,5,7)★

PRODUCTION SWITCHERS

TYPES: portable (1); large studio (2); compact studio/mobile (3); automated, microprocessor controlled (4); post-production (5)

SUPPLIERS: Ampex (2-5)★; Asaca (1,3)★; Beaveronics (1,2,3,5)★; Central Dynamics (1-5)★; Comod (1)★; Commerce Air (1); Crosspoint Latch (1-5)★; Echolab (3,4,5)★; Grass Valley (2-5)★; Image Video (1,3)★; Industrial Sciences (1,5)★; International Nuclear (1,5)★; Kaitronics (1,3)★; Lang (1)★; NEC (2,5)★; Ross (1,2,3,5)★; Shintron (3)★; Siegel (5)★; Toshiba (1,2)★; Viscount (1,3)★; Vital (1-5)★

www.americanradiohistory.com

SPECIAL EFFECTS

TYPES: digital efx processors (1); standalone efx generators (2); colorizers (3); RBG chromakeyers (4); encoded chromakeyers (5); title keyers (6); downstream keyers (7); non-additive keyers (8); compressor/positioners (9)

SUPPLIERS: ADDA (9)★; Ampex (1)★; Asaca (2)★; Beaveronics (2,3,4,6,7)★; Broadcast Video (2,4-7)★; Central Dynamics (2-7)★; Chyron (1)★; Colorado Video (3)★; Computer Graphics (1)★; Convergence (1)★; Crosspoint Latch (4,5,7)★; Digital Services Corp. (1)★; Dubner (2)★; Dynair (2)★; For-A (3,6)★; Graham-Patten (6,7)★; Grass Valley (1,4-7)★; Grove (1)★; Image Video (2,7)★; Industrial Sciences (2,4,5,7)★; Interand (1,2,3)★; International Nuclear (2,5,7); JVC (2)★; Knox (3)★; 3M (3)★; Marconi (3)★; MCI/Quantel (1,2,9)★; Multidyne (7)★; NEC (1,2)★; Panasonic (2,3,4,7)★; Shintron (5)★; Siegel (4,5,6,8)★; Telemet (4,5); Thomson-CSF (6,7,8)★; Toshiba (1,2)★; Ultimatte (4)★; Video Assoc. (6)★; Video Data (6)★; Viscount (2)★; Vital (1,2,3)★

MASTER CONTROL SWITCHERS

TYPES: manual (1); automated (2); business automation interfaced (3)

SUPPLIERS: Ampex (1,2)★; Central Dynamics (1,2,3)★; Data Comm. (3)★; Dynair (1,2,3)★; Grass Valley (1,2)★; Image Video (1,2,3)★; Industrial Sciences (1,2)★; International Nuclear (1,2); Matrix Systems (1,2); Viscount (1)★; Vital (1,2,3)★

ROUTING SWITCHERS

TYPES: porallel interface (1); serial interface (2)

SUPPLIERS: AVL Digital (1,2)★; Central Dynamics (1,2)★; Datatek (2)★; Di-Tech (1,2)★; Dynair (2)★; Glentronix (1,2)★; Grass Valley (1,2)★; Grumman★; Hedco (1,2)★; Image Video (1,2)★; Industriol Sciences (1,2)★; International Nuclear (1,2); Kaitronics (1,2)★; 3M (1,2)★; NEC (1,2)★; Telemet (1,2); Ultra Audio (1); Utah Scientific (2)★; Vamco (1,2)★; Viscount★; Vital (2)★

MACHINE CONTROL, TECHNICAL AUTOMATION

TYPES: porallel interface (1); serial interface (2); VI systems (3)

SUPPLIERS: Auburn Instr. (1)★; Avonix; Control Video (1,2,3)★; Datatek (2)★; Dynair (2)★; EECO (3)★; Engineering Lab (1,2,3)★; Grass Valley (1,2)★; Image Video (1,2)★; Kaitronics (1)★; Kavco (1,2)★; 3M (2)★; Recortec (1)★; Solid State Logic (1,2,3)★; Torpey (2)★; Utah Scientific (2)★; Vamco (1,2,3)★; Vital (2)★

POST-PRODUCTION

TYPES: editor/controllers (1); multisource editors (2); SMPTE time code generators, readers (3); SMPTE time code synchranizers (4); proprietary time code systems (5)

SUPPLIERS: Ampex (1,2,3)★; Adams-Smith (3,4)★; Applied Digital (4)★; Audio Kinetics (3,4)★; Bosch (1)★; BTX (1,3,4)★; Cezar (1,3,4)★; CMX (1,2)★; Control Video (1-4)★; Convergence (1,2,3)★; Datametrics (3); Datatron (1-5)★; Datum (1,3,4,5)★; EECO (1,3,4,5)★; Electro & Optical (3,4); ESE (3,5)★; For-A (3)★; Glentronix (3,4)★; Gray (3)★; Grumman (3)★; Harris Broadcast (1)★; Harris Video (1)★; Interactive (1,5)★; Jatex (1,2,3,5)★; JVC (1,3)★; Kaitronics (3)★; Lyon Lamb (1)★; Multidyne (3,4,5)★; Multi-Track (3,4)★; Panasonic (1,3)★; RCA Commercial (1,2)★; Sawyer (1); Shintron (3)★; Skotel (3)★; Sony (1,2,3)★; United Media (1-5)★; Videomedia (1-5)★; Vital (3,4)★; Wide Range (3)★

VIDEO SIGNAL, SYNC GENERATORS

TYPES: sync (1); black burst (2); color bar (3); multiburst (4); staircase romp (5); source identification (6); safe title area (7); countdown (8); video slate board (9)

SUPPLIERS: Amtron (1,7)★; Asaca (1,2,3,4)★; Automation Techniques (2,3)★; AVL Digital (1,2,4,8)★; Bosch (3,6)★; Broadcast Video (7)★; Canter-Redman (2,3,4,5)★; Central Dynamics (2)★; Crosspoint Latch (1,2,3)★; Datatek (2)★; Dynair (1)★; EEG (6)★; For-A (1,2,3,7,8)★; Grass Valley (1,2)★; Gray (7)★; Industrial Sciences (1,2,3)★; International Nuclear (2); Javelin (6); Kaitronics (3)★; Lang (6)★; Leitch (1-7)★; Lenco (1-5)★; 3M (1,2,3)★; Marconi (1,2,3)★; McMichael (6,8)★; Multidyne (1-6,8,9)★; Panasonic (1,3)★; QSI (3,6,8,9)★; Rohde & Schwarz (1)★; Shintron (1)★; Siegel (1,2)★; Sigma (1,2,3)★; Telemet (1,3,4,5); Thalner (8)★; Torpey (8)★; Video Aids (1,2)★; Video Assoc. (9); Visual Info. (1,3,4,5)★; World Video (3)★

VIDEO SIGNAL PROCESSING

TYPES: NTSC encoders (1); decoders (2); comb filter decoders (3); video delay lines (4); video filters (5); video signal, cable equalizers (6); dropout compensators (7)

SUPPLIERS: Adwar (1)★; Allen Avionics (4,5,6)★; Asaca (1)★; Bosch (1)★; Broadcast Video (1-5)★; Canter-Redman (2,3)★; Central Dynamics (6)★; Coastcom (5)★; Datum (1,2)★; Digital Video Systems (3)★; Di-Tech (6)★; Dynair (6)★; Fairchild (4)★; Faroudja (2,3)★; Graham-Patten (6)★; Hedco (6)★; International Nuclear (6); Leitch (4,6)★; Lenco (1,2,4)★; Marconi (1,2,6)★; Microwave Filters (5)★; Multidyne (6)★; North Hills (5)★; Siegel (1,2,3,7)★; Superex (5,6); Telemet (3,6); TEA (4,5,6)★; TTE (3,5)★; Vio Video (1)★

DIGITAL PROCESSING

TYPES: TBCs (1); field synchronizers (2); frame synchronizers (3); framestores (4); TBC/framestores (5); noise reducers (6); image enhancers (7); color correctors (8); video multiprocessors (9); standards converters (10)

SUPPLIERS: ADDA (1,3,4,5)★; Ampex (1)★; Analog Devices; Apert-Herzog (3)★; Broadcast Video (8)★; Digital Video Systems (1,2,3)★; Dubner (8)★; Eigen (4,6)★; Faroudja (6,7,8)★; Fortel (1,3,6,7)★; For-A (1,3,7,8)★; Grumman (3)★; Harris Broadcast (1,3,4,5)★; Harris Video (1,3,5)★; Hitachi (1)★; Marconi (8)★; MCI/Quantel (1-6,10)★; McMichoel (10)★; Merlin (1)★; Microtime (1,3-7)★; NEC (1,3,6)★; NTI (4)★; Oki (10)★; Phasecom (1); RCA Commercial (1)★; Siegel (8)★; Sony (1)★; Superex (7,9); Thomson-CSF (1,2,3,5-9)★; Toshiba (4)★; Vidicraft (7)

★ MEANS IT'S VERIFIED

VIDEO AMPLIFIERS

TYPES: processing amps (1); pulse amps (2); video DAs (3); subcarrier amps (4)

SUPPLIERS: Automation Techniques (1)★; AVL Digital (2,3)★; Broadcast Video (1,3)★; Canter-Redman (1,3)★; Central Dynamics (2,3,4)★; Channelmatic (3); Comad (3)★; Commerce Air (3); Datatek (2,3)★; Di-Tech (3)★; Dynair (2,3)★; For-A (3)★; GBC (2,3); Graham-Patten (2,3,4)★; Grass Valley (1-4)★; Grummon (1)★; Hedco (2,3,4)★; Industrial Sciences (1-4)★; International Nuclear (1,4); Javelin (3); Knox (1,3)★; Lang (3)★; Leitch (1,2,3)★; Lenco (1-4)★; Marconi (2,3)★; NEC (1)★; Opamp (2,3)★; Panasonic (2,3)★; QSI (3)★; Shintron (2,3,4)★; Siegel (1)★; Sigma (1-4)★; Superex (3); Telemet (2,3); TEA (3)★; Vamco (3)★; V.A.M.P. (iso amps)★; Versa Count (1); Vidicraft (1,3); Viscount (3)★; Video Aids (2,3)★; Vital (2,3)★

VIDEO MONITORS

TYPES: monochrome (1); NTSC color (2); RGB (3); portable, dc (4); video projectors (5); monitor calibrators (6)

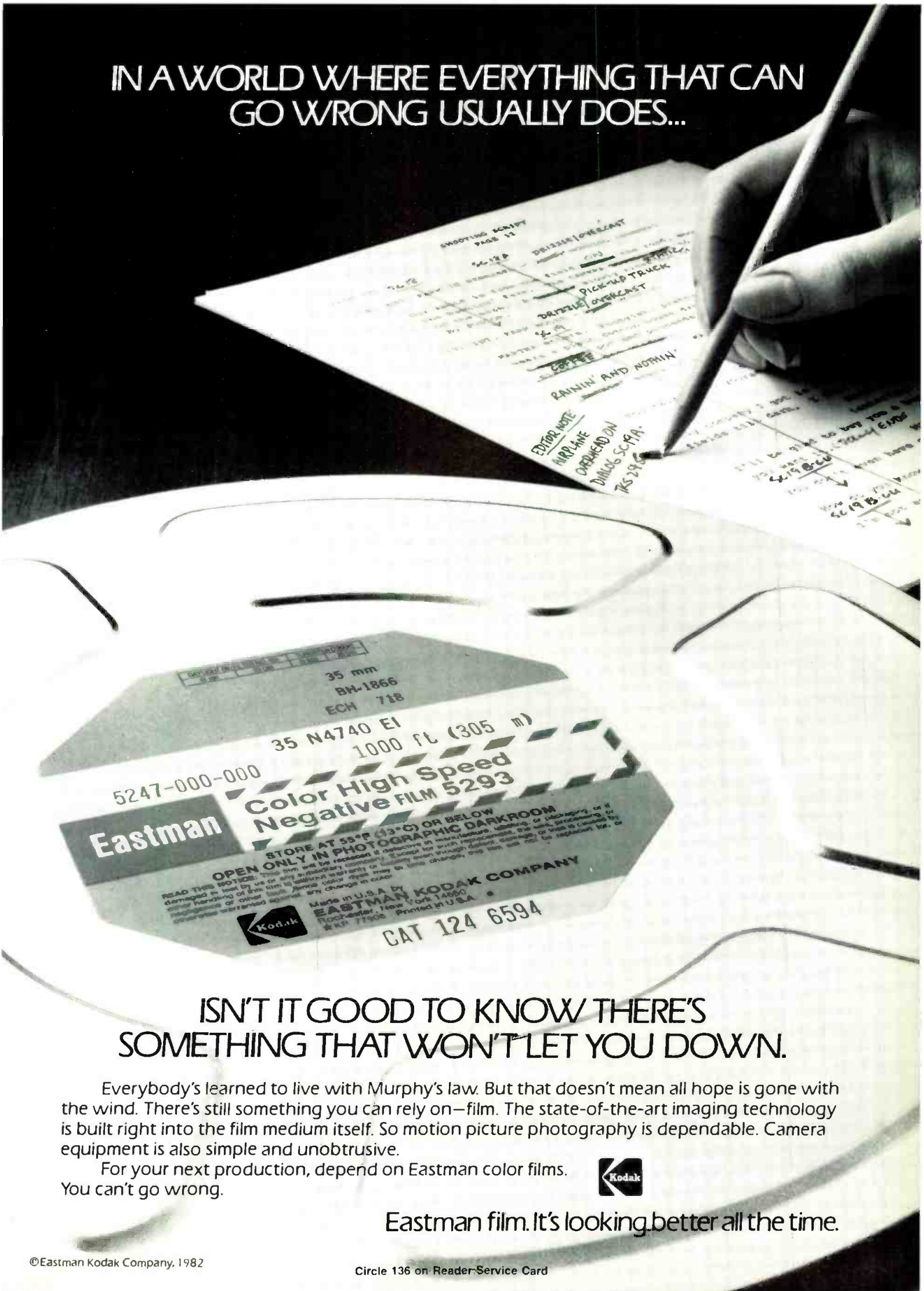
SUPPLIERS: Amtron (1,2,3)★; Asoca (2,3,4,6)★; Avonix (5); Bosch (2,3)★; Canter-Redman (3,5)★; Central Dynamics (2)★; Cinema Products (1,2)★; Conrac (1,2,3)★; Elector (2,3)★; Electrohome (2,5)★; Electro & Optical; GBC (1); General Electric Video (5)★; Heath (5); Hitachi (1,3)★; Ikegami (1,2,3)★; Image Magnification (5)★; Inflight (5)★; Javelin (1); JVC (2,3,4)★; Lectrotech (2); Leitch (6)★; McMichael (2,3)★; Minolta (6)★; Panasonic (1-5)★; Power-Optics (6)★; Ramtek (1,3)★; Rohde & Schwarz (1,2,3)★; Sharp (2)★; Sany (1,2,5)★; TEA (6)★; Tritronics (2)★; V.A.M.P. (1,2,4)★; Videotek (2,3,4)★; World Video (2,3)★

OTHER VIDEO EQUIPMENT

TYPES: signal multiplexers (1); test charts, slides (2); video business auto hardware (3); TV newsroom computers (4); other (5)

SUPPLIERS: Basys (4)★; Computer Business (3); Control Video (3)★; Cox (3)★; Data Comm. (3)★; Edcor (1)★; Eigen (5)★; Glentronix (2)★; Grass Valley (5)★; Heath (4); Hewlett-Packard (3)★; Image Resource (5)★; Industrial Sciences (5)★; Jefferson Data (3,4)★; Kalart Victor (5)★; Kaman (3,4)★; Marconi (2)★; Microtime (5)★; NEC (1)★; Newscan (4)★; Nidus (4)★; North Hills (1)★; W.A. Palmer (5)★; Porta-Pattern (2)★; Quanta (4,5)★; Recortec (5)★; R.E. (1)★; Reynolds/Leteron (5)★; RTI (3)★; Warren R. Smith (5)★; Station Business (3,4)★; Telesource (4)★; TVNS (4); Visual Info. (2)★; Frank Wooley (animation graphics)★

www.americanradiohistory.com


IN A WORLD WHERE EVERYTHING THAT CAN GO WRONG USUALLY DOES...
35 mm
BH-1866
ECH 718
35 N4740 EI
1000 ft (305 m)
5247-000-000
Eastman
Color High Speed
Negative FILM 5293
STORE AT 55°F (13°C) OR BELOW
OPEN ONLY IN PHOTOGRAPHIC DARKROOM
EASTMAN KODAK COMPANY
CAT 124 6594
ISN'T IT GOOD TO KNOW THERE'S SOMETHING THAT WON'T LET YOU DOWN.
Everybody's learned to live with Murphy's law. But that doesn't mean all hope is gone with the wind. There's still something you can rely on—film. The state-of-the-art imaging technology is built right into the film medium itself. So motion picture photography is dependable. Camera equipment is also simple and unobtrusive.
For your next production, depend on Eastman color films. You can't go wrong.
Kodak
Eastman film. It's looking better all the time.
©Eastman Kodak Company, 1982
Circle 136 on Reader Service Card
www.americanradiohistory.com

LIGHTING, POWER, SUPPORT, SET DESIGN, ETC.

CAMERA, MICROWAVE SUPPORT

TYPES:	SUPPLIERS:
tripods, heads (1)	Arriflex (1,5)★; Birns & Sawyer (1,8)★; Bogen (1)★; Calvert (1-4,8)★; Camera Mart (1,2,5)★; Cinema Products (1,5)★; Cine 60 (3,9)★; Commerce Air (6); Davis & Sanford (1,8)★; ENG Helicopter (5,6)★; Alan Gordon (1,8)★; Harris Broadcast (1-4,6)★; Heitz (1,8)★; ITE (1,2,3,8)★; Javelin (4); K&H (3)★; Lee (7,8)★; Listec (1-4,7,8)★; Matthews (7,8)★; Miller Professional (1,8)★; O'Connor (1,2)★; Quick-Set (1,2,8)★; Sachtler (1,3)★; Sfena (5)★; Smith-Victor (1)★
pedestals (2)	
ENG braces (3)	
remote pan/ tilt systems (4)	
camera, lens stabilizers (5)	
helicopter rigs (6)	
cranes (7)	
dollies (8)	

LIGHTING

TYPES:	SUPPLIERS:
lamps (1)	Peter Albrecht (4)★; Arriflex (2,4)★; Atlas Sound (4)★; Barbizon (1-9)★; Bardwell & McAlister (1,3,4,8); Birns & Sawyer (3,7)★; Bogen (1)★; B-W Lighting (1-6,8)★; Cinema Products (1,2,3)★; Colortran (1,3-8)★; Comprehensive Video (3,7,8)★; Cool Light (1,3)★; Electro Controls (5,6)★; Electronics Diversified (5,6)★; F&B/Ceco (1-4,7,8)★; Frezzolini (1,3,4,7)★; General Electric Lighting (1,3)★; Alan Gordon (9)★; Graphic Express (9)★; Great American (1,2,3,5,8,9)★; Grosh (4); GTE/Sylvania (1)★; Harwood (9); Heitz (4)★; Ideal (6); Janson (1,3,5,9)★; Kliegel (3-6,8)★; Lee (1-8)★; Lowel-Light (3,4,7,9)★; LTM (1-5)★; Matthews (4,7)★; Male-Richardson (1-8)★; Olesen (1-7); Osram (1,2)★; Packaged Lighting (3-8)★; Phoebus (1,3)★; Polites (4)★; Rainbo (9)★; Rosco (7)★; Skirpan (5,6)★; Smith-Victor (1,3,4,7)★; Strand Century (2-6,8)★; Superior (6); Teatronics (5,6)★; Teledyne Bigby (emergency)★; Theater Techniques (5,6)★; Theatrical Services (1-9)★; TVI (1,3-8)
HMI, CSI fixtures (2)	
quartz fixtures (3)	
stands, rigging (4)	
lighting control boards (5)	
dimmer packs (6)	
diffusion, efx material (7)	
cyc lighting (8)	
other (cycs, etc.) (9)	

POWER SUPPLIES

TYPES:	SUPPLIERS:
nicad batteries, chargers (1)	Alexander (1)★; Anton/Bauer (1,2,5)★; Arriflex (1)★; Birns & Sawyer (1)★; B-W Lighting (1)★; California Inst. (4,6)★; John Chiles (1)★; Christie (1)★; Cinema Products (1)★; Cine 60 (1,7)★; Colortran (1)★; F&B/Ceco (1,4)★; Frezzolini (1,6)★; G&M (1,3,5,6); Hipotronics (7)★; JVC (1)★; Leader Inst. (7)★; Lee (1,4,5,6)★; LTM (1,2,3); Male-Richardson (4)★; Motorola (6)★; North Wind (3,4,6,7)★; Onan (4)★; Packaged Lighting (5)★; PEP (1,6)★; Perrott (1,2,3)★; Portable Energy (1,3)★; Radmar (3)★; Smith-Victor (3,6)★; Teledyne Energy (4)★; Topaz (6)★; Vanner (6); Winegard (7); Yardney (1,2,3)★
silver-zinc batteries, chargers (2)	
lead-acid batteries, chargers (3)	
power generators (4)	
AC power dividers (5)	
inverters, converters (6)	
other (7)	

TELEPROMPTERS

TYPES:	SUPPLIERS:
monitor-based (1)	Beston (3)★; Cinema Products (4)★; Listec (1)★; Q-TV (1-4)★; Telescript (1)★
scroll entry (2)	
keyboard entry (3)	
ENG/EFP portable (4)	

TRANSPORTATION CASES

TYPES:	SUPPLIERS:
foam insert (1)	Anvil (1,2,3)★; William Bal (1,2)★; B-W Lighting (1,2)★; Calzone (1,2,3)★; Cases, Inc. (1,2,3)★; Center Video (3)★; Environmental (1,2); Excalibur (1,2,3)★; Fiberbilt (1,2)★; Hardigg (1,2)★; K&H (1)★; Lee-Ray★; Lipsner-Smith (3)★; LTM (1)★; Parsons (1)★; Plastic Reel (1,2)★; RTI (2,3)★; Star Case (1,2,3)★; Thermodyne (1,2)★; Winsted (3)★
rack configuration (2)	
editing, production consoles (3)	

SET DESIGN

TYPES:	SUPPLIERS:
modular news, studio sets (1)	Peter Albrecht (3)★; Arben (1,2,4)★; Gagnon LaForest (3)★; Grosh (1,2,3); Janson (2,3,4)★; Rees (1)★; Syracuse (3)★; Theatre Service (3)★; TVI (2,3,4); Uni-Set (1)★
scenery construction (2)	
scenery rigging (3)	
props, materials (4)	

RF, TRANSMITTING/ RECEIVING EQUIPMENT, ANTENNAS, TOWERS

TRANSMITTERS

TYPES:	SUPPLIERS:
AM (1)	Acrodyne (3-6)★; Anixter-Mark (3,5); Bayly (2,3,4)★; Broadcast Electronics (2)★; Central Dynamics (3,4)★; Comark (3)★; Continental Electronics (1,2)★; Elcom Bauer (1,2)★; EMCEE (3-6)★; Harris Broadcast (1-4)★; International Microwave (1,2); Larcan (2,3,4,6)★; Larel (2); LPB (1)★; Marconi (1-4)★; McMartin (1-6)★; Nautel Maine (1); NEC (2,3,4)★; QEI (2)★; Radio Systems (1)★; RCA Commercial (1-4)★; RHG (2); Rodelco (6)★; Rohde & Schwarz (4)★; Ken Schaffer (2)★; Singer Broadcast (1,2,3)★; Television Tech. (3-6)★; Tepco (5,6)★; Townsend (3-6)★; Versa Count (2,6)
FM (2)	
UHF (3)	
VHF (4)	
LPTV (5)	
translators (6)	

★ MEANS IT'S VERIFIED

RF POWER EQUIPMENT

TYPES:	SUPPLIERS:
RF amplifiers (1)	Alford (13); AVA (1,7,9); Barker & Williamson (9,10); Bayly (1)★; Bird (7,9,10,11)★; Blonder-Tongue (1,9,10)★; Broadcast Electronics (1,5,14)★; Catel (1,8,14,15); Central Dynamics (6)★; Cetec (1,8,14,15); Central Dynamics (6)★; Cetec (9,12,13)★; Coastcom (13)★; Coaxial Dynamics (9-12)★; Comark (1,6-9,11,12,13,15)★; Continental Electronics (1,4,5,9,10,13,14)★; CSP (9-13,16); Delta Electronics (11)★; Dielectric (10); Dymo (11)★; Dynair (15)★; Ecanco (2); Eidson (16)★; Eimac (1,2,9)★; Elcom Bauer (3,5)★; Electro Impulse (10)★; Harris Broadcast (3-6,14,15)★; International Microwave (1); ITT (11)★; Kahn (4,14)★; Larcan (1,5,6,13)★; LPB (3)★; M/A-COM (9,10,13,16)★; Magnecraft (11); McMartin (1,4,5,6,14,15)★; Micro Comm. (9-13); Micradyne (15)★; Microwave Filter (9,12,13)★; Kilovac (11)★; Moseley (12,14)★; Motorola (4)★; Mu-Del (1,7,8,9,13)★; Nautel Maine (1,3,4,14,15); NEC (5)★; North Hills (12)★; Oak (8)★; Orban (14,16)★; Phasecom (15)★; Phelps Dodge (11,12)★; Philips T&M (6,14,15)★; QEI (1,5,14)★; RCA Commercial (5,6)★; RCA EO&D (2)★; RCA Solid State (2)★; R.E. (14)★; RF Technology (1)★; RHG (7); RMS (11)★; Rohde & Schwarz (15)★; Scala (12); Scientific-Atlanta (12,15)★; Shively (9-13)★; Singer Broadcast (3,5)★; SWR (11)★; Telemet (15)★; Television Tech. (1,5,12,15)★; Telonic (7,9); Tennaplex (9,11,13)★; Tepco (1,9,15)★; Terracom (13); Texscan (1,7,9); Townsend (1,6)★; Tweed (1,9)★; UHF (15)★; Versa Count (1,5,6); Vidicraft (8,15); Wavetek (9)
RF power tubes (2)	
AM exciters (3)	
AM stereo exciters (4)	
FM exciters (5)	
TV exciters (6)	
RF attenuators (7)	
RF converters (8)	
RF filters (9)	
RF loads (10)	
RF switches (11)	
power dividers (12)	
diplexers (13)	
stereo generators (14)	
modulators (15)	
other (16)	

SATELLITE EARTH STATIONS

TYPES:	SUPPLIERS:
transmit/receive (1)	Alden (2)★; Anixter-Mark (1,2,3); Antennas for Comm. (2,3)★; Antenna Tech. (1,2,3); Arvin/Diamond (2)★; Automation Techniques (2)★; Avantek (2); California Microwave (1,2,3); Coastcom (1)★; Comtech (1,2,3); Conifer (2); Dexcel (2)★; Fort Worth Tower (2,3); Gabriel (2); Gardiner (2); GTE Lenkurt (2); Harris (1,2,3)★;
receive only (2)	
transportable (3)	

www.americanradiohistory.com

The Investment that grows

DATATEK **D-2000**

ROUTING SWITCHERS

Industry leading technical performance.
For example, maximum audio output is +30dBm without requiring transformers and noise is over 105dB below maximum output.

Inherent reliability.
For example, the D-2000 **avoids** putting multiple inputs and outputs on a common PC board, **avoids** party lining control systems in preference to private lining and **avoids** reliance on a central microprocessor system. Instead, each input and each output bus are on individual plug-in modules and each output bus has its own independent microprocessor control system. A fault therefore can only affect one input or one output and not the entire system.

Expansion Capacity to 250x250 Systems,
with up to 8 control levels. There is no need to specify initially the ultimate matrix size.

Large Selection of Control Panels.
For example, there are over 25 different standard control panels, including individual pushbutton, keypad, alpha numeric and CRT matrix status display. Datatek can also design control panels for special requirements. Control is over a single coax line.

For More Information, Write or Call:

DATATEK CORP.

1166 W. CHESTNUT ST.
UNION, NJ 07083 • 201-964-3656

Circle 137 on Reader Service Card

www.americanradiohistory.com

Hughes Microwave (2)★; M/A-COM (1,2,3)★; McMartin (1,2)★; Microdyne (2,3)★; NEC (2)★; Netcom (2,3)★; New England Sat. (3); Pinzone (2)★; Satcom (1,2)★; Ken Schaffer (2,3)★; Scientific-Atlanta (1,2)★; Winegard (2); Wold (1,2,3)★

MICROWAVE

TYPES: intercity (1), portable ENG (2), airborne (3), central receivers (4)

SUPPLIERS: Broadcast Microwave (1-4)★; Cablewave (1); Commercial Airborne (3); Datum (3,4); E-N-G (2)★; Enstrom (2,3)★; GTE Lenkurt (1); Harris Broadcast (1-4)★; Harris Microwave (1-4)★; Hughes Microwave (1)★; International Microwave (1,2); Loral (1,2,4); M/A-COM (1-4)★; Marti (1-4)★; MBB Helicopter (3)★; Micro Comm. (2); Micro Control (1)★; Moseley (1)★; NEC (2)★; Nurad (1-4)★; Omni Spectra (1)★; RF Technology (1-4)★; RHG (2,3); Systron Donner★; Telonic; Terracom (1,2); Versa Count (1); Wold (1,2)★

REMOTE CONTROL SYSTEMS

SUPPLIERS: American Laser★; CAT★; Channelmatic; Cinema Products★; Coastcom★; Comark★; Engineering Lab★; Hallikainen★; Harris Broadcast★; M/A-COM★; Marti★; McMartin★; Micro Control★; Microdyne★; Moseley★; Nurad★; Power-Optics★; QEI★; Sall; TFT★; Tweed★; Vamco★

REMOTE PICKUP EQUIPMENT

SUPPLIERS: Artel★; Comrex★; Harris Broadcast★; M/A-COM★; Marti★; McMartin★; Moseley★; Motorola★; Scala

STLs

TYPES: microwave (1), satellite (2), telco (3), fiberoptic (4), waveguide (5)

SUPPLIERS: Antennas for Comm. (1,2,3,5)★; Artel (4)★; Avantek (1); Bayly (3)★; Broadcast Microwave (1)★; Cablewave (1,5); Gabriel (1,5); GTE Lenkurt (1,3); Harris Broadcast (1,2)★; Harris Microwave (1)★; Hughes Microwave (1)★; International Microwave (1); Loral (1,3); M/A-COM (1,4)★; Marti (1)★; Micro Control (1)★; Moseley (1)★; Nurad (1)★; R.E.(4)★; RF Technology (1)★; RHG (1); Scientific-Atlanta (2)★; Telemet (3,4)★; TEA (4)★; Terracom (1); TFT (1)★; Valtec (4)★; Versa Count (1)★; Wold (1,2,3)★

SCA EQUIPMENT

TYPES: FM (1), TV (2), terminals (3)

SUPPLIERS: Belar (1,2)★; Broadcast Electronics (1)★; Continental Electronics (1)★; Emergency Alert (1)★; E-N-G (1)★; Harris Broadcast (1,2)★; Johnson (1,2)★; Marti (1,2)★; McMartin (1,2,3)★; Micro Control (1)★; Moseley (1,2)★; QEI (1)★; Tepco (2)★; TFT (1,2)★

WEATHER RADAR SYSTEMS

SUPPLIERS: Advanced Designs★; Alden★; Arvin/Diamond★; Color-Graphics; Enterprise; Information Processing; Kavouras★; Satellite Broadcast★; Technology Service★

SLOW SCAN TRANSMITTERS, RECEIVERS

SUPPLIERS: Colorado Video★; NEC★; Ken Schaffer★; Terracom

TWO-WAY RADIO COMMUNICATIONS TRANSMITTERS, RECEIVERS

SUPPLIERS: Bayly★; Circuit Devel.★; GTE Lenkurt; HME★; Marconi★; Marti★; McMartin★; Motorola★; Sonar★; Swintek★

ANTENNAS

TYPES: AM (1), FM (2), TV HP (3), TV CP (4), microwave (5), satellite dish (6), communications (7), antenna tuning units (8)

SUPPLIERS: Alford; Andrew (3,5,6,7)★; Anixter-Mark (5,6,7); Antennas for Comm. (5,6,7)★; Antenna Tech. (5); Barker & Williamsan (7); Blonder-Tongue (2,3)★; Bogner (2-5)★; Broadcast Microwave (5)★; Cablewave (5); Cetec Antennas (2,3,4)★; Comark (2)★; Continental Electronics (2,8)★; CSP (8); Elcom Bauer (8)★; Gabriel (5,6); Grumman (8)★; Harris Broadcast (1-6,8)★; Harris Satellite (6)★; Hughes Microwave (6)★; Johnson (2)★; Larcan (3)★; LeBlanc & Royle (1); M/A-COM (6)★; Magnum (1)★; Marti (5,7)★; McKay Dymek (1,7)★; McMartin (1,2,3,4,6,7,8)★; Micro Comm. (2,4,5); Microdyne (6)★; Motorola (7)★; Netcom (6)★; Fred A. Nudd (1); Nurad (5)★; Old Dominion (8)★; Phelps Dodge (2,7,8)★; Prodelin (5,6)★; RCA Commercial (2,3,4)★; RF Technology (5)★; RHG (7); Satcom (6)★; Scala (2,7); Scientific-Atlanta (2,3,6)★; Shively (2,3,4,8)★; Sitco (3)★; SWR (3)★; Telex (7)★; Tennaplex (2,3,4,7)★; True Time (6)★; Winegard

TRANSMISSION LINE, CABLE, CONNECTORS

TYPES: solid core (1), foam dielectric (2), fiberoptic (3)

SUPPLIERS: Andrew (1,2,3)★; Anixter-Mark (2); Antennas for Comm. (2)★; Artel (3)★; Brand-Rex (1,2,3)★; Cablewave (2); Daburn (1,2,3)★; Gabriel (1,2); Marti (2)★; McMartin★; Phelps Dodge (1,2)★; Prodelin★; Scientific-Atlanta (2)★; Siecar (3)★; SWR (1)★; Telemet (3)★; Times (1,3)

TOWERS

TYPES: towers, masts (1), tower hardware, construction equip. (2), tower lighting (3)

SUPPLIERS: Advanced Industries (1,2,3)★; Allen Osborne (1)★; Allied Tower (1,2,3)★; Atlas Tower (1,2,3)★; Broadcast Microwave (1)★; Capperweld (2)★; Deters (1,2)★; EG&G (3)★; Flash Tech. (3)★; Fort Worth Tower (1,2,3); Grasis (1,3)★; Hughey & Phillips (3)★; Kline (1,2); LeBlanc & Royle (1,2,3); Magnum (1,2)★; McMartin (1)★; Microflect (1)★; Narton (2)★; N-Pro (1)★; Fred A. Nudd (1,2); Allen Osborne (1)★; Philadelphia Resins (2)★; Palites (2)★; Racal-Decca (2,3)★; Stainless (1)★; Swager (1,2,3)★; Telex (1,2)★; TMD (1); Tri-X (1); UNR-Rohn (1,2,3)★; Utility Tower (1,2,3)★; Van Ladder (1)★; ZRC (2)★

★ MEANS IT'S VERIFIED

OTHER RF EQUIPMENT

TYPES: program subcarrier (1), carrier current (2), phasing network (3), PTV scramblers (4), other (5)

SUPPLIERS: American Laser (5)★; Blonder-Tongue (4)★; California Microwave (4); Coastcom (1)★; Continental Electronics (3)★; CSP (3); Datum (5)★; Dynacam (4,5)★; GTE Lenkurt (1,5); Harris Broadcast (3)★; International Microwave (1); Kappa (3); LPB (2)★; Marti (1)★; McMartin (1,2)★; Micro Comm. (5); Micro Control (1)★; Moseley (1)★; Oak (4)★; Scientific-Atlanta (1)★; Tepco (1)★; Winegard (4); Zenith (4)★

TEST AND MEASUREMENT, LOGGING, TIMING

RF T&M

TYPES: demodulators (1), modulation monitors (2), antenna monitors (3), AM field intensity meters (4), FM field intensity meters (5), TV field intensity meters (6), RF power meters, wattmeters (7), RF calorimeters (8), frequency monitors, controllers (9), RF test signal generators (10), impedance bridges (11), phase meters (12), other (13)

SUPPLIERS: American Laser (13)★; Anchor (1); R.B. Annis (13)★; Bald Mountain (9)★; Barker & Williamson (7); Belar (1,9)★; Bird (7,8)★; Boonton (2,7,10,11); Bush & Millimaki (1)★; Coaxial Dynamics (3,5,9)★; Comark (1)★; Delta Electronics (2,3,10,11)★; Dielectric (7); DigiMax (13)★; EEG (1)★; Electro Impulse (7,8)★; John Fluke (10)★; Global Spec. (9,13); Gorman-Redlich (3,12)★; Harris Broadcast (2)★; Heath (9); Hewlett-Packard (2,11)★; Hipotronics (7)★; Kappa (13); Koy (10)★; Leader Inst. (6,7,10,11,13)★; Lectrotech (9); Lenco★; McMartin (1,2,5,9)★; Minolta (13)★; Keith Monks (11,12)★; Motorola (2,7,9,10)★; Phasecam (1)★; Philips T&M (1,10)★; Polarad (4,5,6,10)★; Potomac (3-6,10,12)★; QEI (2)★; QSI (1)★; R.E. (2,10)★; Rohde & Schwarz (1,4,5,6)★; Sadelco (6,11,13)★; Scientific-Atlanta (1,2,9,10)★; Sencore (11)★; Sennheiser (11)★; Shively (7)★; Sound Tech. (10)★; Studer Revox (1)★; Systron Donner (9,10)★; Tektronix (1)★; Telemet (1)★; Telonic (11); Texscan (11); TFT (1,2,9)★; Versa Count (2); Video Aids (12)★; Videotek (1)★; Weston (9)★; Wide Band (11,13)★; World Tower (1)★

www.americanradiohistory.com

The Harris TC-85...when you want more from your cameras than just pretty pictures.

You naturally expect excellent picture performance from a studio camera...and the TC-85 delivers. So do some others.

But you need more than high picture quality for truly cost effective broadcasting. And here the TC-85 is way out in front.

Cuts valuable setup time. Each TC-85 has a built-in independent computer that allows simultaneous multi-camera setup at the touch of a button *...in just 45 seconds!*

Extra operational safety. If one computer should fault, only one camera is affected, not all cameras.

Easy operation. At the touch of a button you get consistent quality setups of all your cameras. A complete tube change can be made in less than 5 minutes.

Great flexibility. Preset color balance for several scenes, then as you move from set to set just push a button to recall the settings. And add-on Triax makes "on-location" shooting a cinch.

Priced well below competitive models. Let us give you a quote, and you'll see what we mean.

There's more, and it's all backed by Harris' unique *manned* 24-hour-a-day service. For full details contact Harris, P.O. Box 4290, Quincy, Illinois 62305-4290. 217/222-8200.

HARRIS

Circle 138 on Reader Service Card

www.americanradiohistory.com

AUDIO T&M

TYPES: audio test signal generators (1), harmonic distortion meters (2), IM meters (3), spectrum analyzers (4), sideband analyzers (5), wow & flutter meters (6), other (real time analyzers, etc.) (7)

SUPPLIERS: Amber (1-4); Asaca (1,2)★; Audisar (1); AVAB (5,6)★; Bald Mountain (1)★; Bruel & Kjaer (1-7)★; CBS Tech. (7)★; Cetec Vega (1)★; Data Precision (6); Datatronix (1); DigiMax (7)★; Electro Sound (1)★; Eventide (4)★; Fidelipac (6)★; Finntek (1); Frequency Devices (1); Glentronix (5)★; Global Spec. (7); Gotham Audio (6); Heath (2); Hewlett-Packard (4,5)★; HF (1,2)★; Inovonics (4)★; Ivie (1,4)★; Kay (4)★; Klark-Teknik (4)★; Leader Inst. (2,6)★; Modular Audio (1)★; Motorola (4)★; NEI (4)★; Polarad (4)★; Potomac (1,2,3,6)★; R.E. (2,3,4,6)★; Ken Schaffer (4)★; HH Scott (4); Sencore (1)★; Sescom (1,2)★; Sound Tech. (1-4,6,7)★; Spectra Sonics (1,7)★; Tektronix (2,4,5)★; Texscan (4); United Recordings (1)★; Wavetek (1,4); White (1); Xedit (6)★

VIDEO T&M

TYPES: video test signal generators (1), automatic VITS analyzers (2), blanking meters, adjusters (3), burst phase meters (4), diff. phase/gain meters (5), video noise meters (6), waveform monitors (7), vectorscopes (8), other (9)

SUPPLIERS: Amtron (1)★; Asaca (1,2,6)★; Auburn Instr. (3)★; AVL Digital (1)★; Broadcast Video (2,3,7,8)★; Canter-Redman (1,7,9)★; Finntek (1); Fiorentino (9)★; Heath (8); Hedco (9)★; Hewlett-Packard (5)★; Hickock (1)★; Leader Inst. (1,7,8)★; Lectrotech (7,8); Leitch (1,9)★; Lenco (6)★; Multidyne (1)★; NTI (1)★; Philips T&M (1,2,7,8)★; Porta-Pattern (9)★; Rohde & Schwarz (1,2,6)★; Sencore (1)★; Tektronix (1,2,7,8)★; Telemet (1); TEA (1)★; Tungstone (1,2,3,6); Ultra Audio (7,8)★; Video Aids (4)★; Videotek (7,8)★; Visual Info. (1)★; Wavetek (1); World Video (3,9)★

GENERAL T&M

TYPES: oscilloscopes (1), delayed sweep scopes (2), voltmeters (3), multimeters (4), dB meters (5), logic analyzers (6), other (7)

SUPPLIERS: Amber (5); Apert-Herzog (6)★; Bald Mountain (5)★; Boonton (3); Bruel & Kjaer (3,5)★; Data Precision (1,3,4,7); dbx (5)★; John Fluke (3,4,5)★; Global Spec. (7); Heath (1,3,5); Hewlett-Packard (1,3-7)★; HF (3)★; Hickock (1,4,6)★; International Instruments (3,5)★; ITT (3)★; Leader Inst. (1-5)★; Marshall Claude (1,3,4,6)★; Motorola (1-6)★; Odetics (6)★; Philips T&M (1,2,6)★; Practical Tech. (6)★; Sencore (1,3,5)★; Systron Donner (4,5)★; Tektronix (1,2,4,6)★; Telonic (5); Texscan (1); TM Systems (5)★; Vidaire (4)★; Wavetek (1); Weston (3,4,5)★

LOGGING, MONITORING

TYPES: tape-based loggers (1), log printers (2), chart recorders (3), automatic TV monitors (4), automatic radio monitors (5), status, alarm indicators (6), other (7)

SUPPLIERS: Alden (3)★; B&I (6)★; Bird (6)★; Bruel & Kjaer (3)★; Delta Electronics (6)★; Dictaphone (1)★; Hallikainen (2,7)★; Logitek (3)★; Moseley (2,6)★; Nagra (1,3)★; Neutrik (3)★; Pinzone (6)★; Potomac (2,5,6)★; Scientific-Atlanta (6)★; SoundScriber (1)★; Stancil (1); Telex (1)★; TFT (6)★; Trepac (6)★; United Recording (3)★; Vidicraft (6)

CLOCKS, TIMING

TYPES: digital clocks (1), master, slave clocks (2), timers (3), time distribution (4), other (5)

SUPPLIERS: Amtel (1-4); Audio Techniques (1)★; BG Engineering (3)★; Broadcast Aids (1,3)★; Channelmatic (1,5); Chrono-Log (1-4)★; Datum (1-5)★; ESE (1-4)★; For-A (3)★; Glentronix (1,2)★; KB (1,3); Kitchen (5); Lauderdale (1,3); Leitch (1,2)★; McCurdy (1,2)★; NES (1,2,3); Odetics (1-4)★; QSI (3)★; Radio Systems (3)★; RTI (3)★; Sharepoint (1,3)★; Skotel (5)★; Standard Elect. (1-4)★; Systron Donner (1,4)★; Torpey (1-5)★; True Time★; United Media (4)★

COMPONENTS, HARDWARE

FURNITURE, STORAGE

TYPES: studio furniture (1), studio consoles (2), tape storage units (3), 19-inch equipment racks (4)

SUPPLIES: Allied Broadcast (1,2)★; Amco Engineering (1,2,4)★; Aristocart (3)★; Bayly (4)★; B-W Lighting (4)★; Calzone (1,4)★; Enclosure (4); E-N-G (4)★; Environmental (4); Fidelipac (3)★; GF (2,4); GKM (4); Graphic Express (2); Grinnan; Grumman (4)★; Harris Broadcast (2)★; HSC (1,2,4)★; Marconi (2,4)★; Neumade (3); Optima (1-4)★; Plastic Reel (3,4)★; Protech (2)★; RTI (1,3,4)★; Ruslang (1-4)★; Scientific-Atlanta (4)★; Stantron (1,2,4)★; Storeel (3)★; Tweed (1,2,4)★; Wallach (3)★; Winsted (1-4)★

WIRE, CABLE, CONNECTORS

TYPES: video cable (1), audio cable (2), lighting, ac cable (3), RF cable (4), connectors (5), jackfields, patch panels (6)

SUPPLIERS: ADC (5,6)★; Alpha Wire; Audio Techniques (2)★; Audio-Technica (2)★; Belar (1,4)★; BIW (1-5)★; Brand-Rex (1-5)★; B-W Lighting (3,5,6)★; Cablewave (4,5); Cambridge (5); Canford (2)★; Comad (6)★; Daburn (1-5)★; Dynatech (4,5,6); Glentronix (6)★; Ideal (3,5); Jenel (6); Kings (5,6)★; Lemo (5,6)★; LTM (3,5)★; M/A-COM (4,5)★; Marconi (6)★; Motorola (4,5)★; Neutrik (5)★; Olesen (3,5); Pace★; Panduit (5)★; RCA (4,5)★; RMS (1,5)★; Scientific-Atlanta (4)★; Seacor (5)★; Sescom (2,5,6)★; Shively (4,6)★; Shure (2)★; Spectra Sonics (2)★; Superior (5); Switchcraft (2,5,6)★; SWR (4,5)★; Trompeter (1,4,5,6)★; Union Connector (3,5,6)★; Vidaire (2,5)★; Wireworks (1,2,5,6)★

★ MEANS IT'S VERIFIED

HUM BUCKING COILS

SUPPLIERS: Jenel; North Hills★; PTS★; V.A.M.P.★

RF GASKETS, INDUCTORS

SUPPLIERS: Calvert★; Kappa

VACUUM TUBES

SUPPLIERS: Amperex★; Calvert★; Econco; Eimac★; Freeland★; Inmark★; RCA★; Thomson-CSF★; Thor; Vacuum Tube★; Westinghouse★

SOLID STATE COMPONENTS

SUPPLIERS: Amperex★; Apert-Herzog★; Calvert★; Fairchild★; M/A-COM★; Motorola★; RCA★; Thor

TRANSFORMERS

SUPPLIERS: Calvert★; Dohl★; Hipatronics★; Hughey & Phillips★; Jensen Transformers★; Kappa; Microtran; North Hills★; Protech★; Sescom★; Superior; Topaz★; TTE★; United Recording★; V.A.M.P.★

RECTIFIERS

SUPPLIERS: Amperex★; Calvert★; Eimac★; Electronic Devices★; Hipatronics★; Thor

SURGE PROTECTORS

SUPPLIERS: Calvert★; Dyma★; Lightning Elimination★; MCG; RCA★; Siemens★; Superior; Thor; Topaz★

QUARTZ CRYSTALS

SUPPLIERS: Calvert★; Motorola★; Perrott★

TOOLS

SUPPLIERS: Cooper Group; Ideal; Jensen Tools★; M/A-COM★; Marshall Claude★; Pace★

OTHER

SUPPLIERS: Grasis★; Gruver; Hedco★; HSC★; Surcom (capacitors)★

www.americanradiohistory.com

MZB DELIVERS!

"MZB delivered for us. The right truck, the right equipment, at the right price."

— **Bob Gutierrez**

Hispanic Telecommunications Network
San Antonio, Texas

Pictured (L-R) are Bob Gutierrez, HTN Media Director; "Nuestra Familia" Producer Oscar Lawson; and HTN President Adan Medrano

For 27 years MZB has been delivering equipment and services to the Broadcast and Professional market. But we deliver something else too: Integrity and Excellence.

In other words, we do what we say we are going to do. And we won't compromise when it comes to doing the job right.

If you think a philosophy like this sounds too expensive, you're going to be pleasantly surprised. The custom mobile unit shown above is a good example. It's well designed, built with quality materials, and engineered for easy operation and maintenance. And it's priced very attractively, too.

So, whether it's a 'turn key' studio facility or a mobile production unit, call us.

We have a quarter-century of integrity and excellence built into every system.

MZB & ASSOCIATES

"The Professional Touch"

• *Corporate Office:* 4203 Beltway Drive/Dallas, Texas 75234/ phone (214) 233-5535/Telex: 79-5028 MZB DA

Circle 139 on Reader Service Card

www.americanradiohistory.com

SERVICES

EQUIPMENT RENTAL

SUPPLIERS: Adwor*; Aphex*; Audio Techniques*; Audio-Video; Best Audio*; Birns & Sawyer*; Comera Mort*; Center Video*; Cetec Antennas*; Columbia Video*; Digitol by Dickinson*; Victor Duncon*; Dymo*; ENG Helicopter*; Fantasee; F&B/Ceco*; Fitzco*; Film/Video Equip.*; Frezzolini*; Generol Television; David Green; Image Devices; Landy*; Leasametric*; L. Matthew Miller; Mitsubishi*; MPCS*; Plastic Reel*; Sawyer; Ken Schaffer*; Solid; John Sullivan*; Technisphere*; TV Graphics*; Video Corp.*; Westec

AUDIO POST-PRODUCTION FACILITIES

SUPPLIERS: Best Audio*; Compact Video*; Continental Recording; Correlli; Firstcom*; General Television; Gruver; Kansas; McCurdy*; W.A. Palmer*; Peters; Richmond Sound*; Scharff*; William B. Tanner*; Valentino; Westec

RECORDING STUDIOS

SUPPLIERS: American Image; Columbia Video; Continental Recording; General Television; Gruver; JAM; Kansas; Music Director*; W.A. Palmer*; Peters; Richmond Sound*; United Recording*; Valentino*

VIDEO POST-PRODUCTION FACILITIES

SUPPLIERS: AF Assoc.*; A&G Prods.*; A&G Video*; All Mobile Video*; A.M.E.*; Astro Video*; Bay Area Mobiletape*; Bullet*; Camrac*; Canter-Redman*; Carleton*; Carob*; Catalyst*; C.C.R.*; Center City*; Center Video*; Century III*; CFI*; Channel One*; Chicago Video*; Chris Craft*; Chronicle*; Cinetape*; Cinetronics*; Color Film*; Columbia Video*; Compact Video*; Continental Colour*; Creative Technology*; Devlin*; Digital Video Productions*; Duart*; Edit/Chicago*; Editel*; Electronic Field Productions*; ESPN*; Excalibur Video*; Fax*; First Comm.*; Florida Prod.*; GBH*; General Television; Golden West*; Hawaii*; HBO*; Image Resources*; Image Transfarm*; Instant Replay*; Interface Video*; International Production*; Jefferson Productions*; Jones*; J.S.L.*; Kansas; Kartes*; KHJ-TV; KQED*; KTVY*; KVIE*; Louisville*; Matrix*; Metro Tape*; Mobile Video Prods.*; Mobile Video Services*; MTI*; MPCS*; Multivision*; National*; NET*; Nexus*; Niles*; North American*; Northeast*; Northwest Prod.*; Northwest Teleprad.*; One Pass*; Opryland*; Optimus*; Pacific Coast*; Pacific Video*; W.A. Palmer*; Phase Two*; Phoenix*; Polycom*; Past Group*; Prime Time; Producers Color*; Producers Video*; Professional Video*; RCA American*; Scene Three*; Skaggs*; Southwest*; Starfax*; John Sullivan*; Sundance*; Sunrise Canyon*; Tapepower*; Technisphere*; Tele-Color*; Tele-Image*; Telemation*; Teleprompter*; Teletronics*; TV Assoc.*; Third Coast*; Today Video*; TPC*; Trans-American*; Tritronics*; UAB*; Unitel*; Versatile Video*; Video Central*; Videocom*; Video Corp.*; Videography*; Video Images*; Video Post*; Videosmith*; Video Tape*; Video Transitions*; Video West*; Western Video*; WGN*; Wickerworks*; Windsor*; WKYT*; WPHL*; WXXI*; Yes*

TELEPRODUCTION FACILITIES

SUPPLIERS: A&G Video*; Airfax*; Bullet*; Burbank Studios*; California Videa*; Camrac*; Carleton*; Catalyst*; Celestial Mechanix*; Center City*; Century III*; Channel One*; Chicago Video*; Chris Craft*; Chronicle*; Cinema Video*; Cinetape*; Cinetronics*; Compact Video*; Computer Image*; Columbia Video*; Creative Technology*; Devlin*; Digital Video Productions*; Docuvid*; ESPN*; Excalibur Video*; Fantasee; Fax*; General Television; Hawaii*; HBO*; Image Resources*; Instant Replay*; Interface Video*; International Production*; Jefferson Productions*; Jones*; Kartes*; KHJ-TV; KQED*; KTVY*; KVIE*; Louisville*; Matrix*; Metro Tape*; Mobile Video Prods.*; Mobile Video Services*; MTI*; National*; NET*; Niles*; Narth American*; Northwest Comm.*; Northwest Teleprod.*; One Pass*; Opryland*; Optimus*; Pacific Coast*; Pacific Video*; Phoenix*; Polycom*; Producers Color*; Producers Video*; Professional Video*; Pyramid*; Scene Three*; Skaggs*; Southwest*; John Sullivan*; Sundance*; Sunrise Canyon*; Tapepower*; Tele-Colar*; Tele-Image*; Telemation*; Teleprompter*; Teletronics*; TV Assoc.*; Third Coast*; Today Video*; TPC*; Trans-American*; Tritronics*; UAB*; Unitel*; Versatile Video*; Video Central*; Videocom*; Video Corp*; Videography*; Video Images*; Videosmith*; Video West*; Western Video*; WGN*; Wickerwarks*; Windsor*; WKYT*; WPHL*; WXXI*; Yes*

MOBILE PRODUCTION FACILITIES

SUPPLIERS: Aerial Video*; A&G Prods.*; A&G Video*; Airfax*; All Mobile Video*; AVT*; Bay Area Mobiletape*; California Video*; Carleton*; Catalyst*; C.C.R.*; Center City*; Channel One*; Chicago Video*; Chronicle*; Clorion*; Compact Video*; Continental Colour*; Creative Technology*; Devlin*; Digitol Video Productions*; Docuvid; Electronic Field Productions*; ESPN*; Excolibur Video*; Fax*; First Comm*; Florida Prod.*; GBH*; Golden West*; Hawaii*; Image Resources*; Jefferson Productions*; Jones*; Kortes*; KHJ-TV; KQED*; KTVY*; KVIE*; Louisville*; Motrix*; Mobile Tech.*; Mobile Video Prods.*; Mobile Video Services*; MTI*; Multivision*; Notionol*; NET*; Niles*; North Americon*; Northeost*; Northwest Comm.*; Northwest Teleprod.*; One Pass*; Opryland*; Pacific Video*; Phoenix*; Polycom*; Producers Color*; Professionol Video*; Scene Three*; Skoggs*; Southwest*; Storfox*; Sundonce*; Sunrise Canyon*; Topepower*; TBS*; Tele-Color*; Tele-Image*; Telemation*; Teleprompter*; Teletronics*; TV Assoc.*; TV Graphics*; Third Coast*; TPC*; Trans-American*; Tritronics*; TRI*; UAB*; Unitel*; Versatile Video*; Vidcam*; Videa Central*; Videocom*; Videography*; Video Images*; Video One*; Videosmith*; Video West*; WGN*; Windsor*; WKYT*; WPHL*; WXXI*; Yes*

FACILITY DESIGN & ENGINEERING

SUPPLIERS: Audia Techniques*; AF Assoc.*; Broadcast Systems*; R.W. Burden Assoc.; California Microwave; Canter-Redman*; Central Dynamics*; Columbia Video; Comark*; Control Tech.; Delcom*; Dynacom; EMCEE*; First Comm.*; Florida Prod.*; GBH*; General Television; Generic; Global Comm.; Golden West*; Graham-Patten*; Grinnan; Grumman*; Harris Satellite*; Hughes Helicopters*; Jamieson*; Jenel; Kavco*; Kitchen; Landy*; Larcan*; Lerro*; Long; Midwest*; Neve*; N-Z Video; Old Dominion*; Peirce-Phelps*; Radio Systems*; RCA*; Real World*; Rees*; Rosner*; Shook*; Soll; Spencer*; Tele-Measurements; Videa Corp.*; Westlake*

ENGINEERING CONSULTANTS

SUPPLIERS: Advanced Designs; Broadcast Techniques*; Broadcast Technology Consultants*; R.W. Burden Assoc.; California Microwave; Condex Pacific*; Canter-Redman*; Comark*; Commerce Air; Compucon*; Comsearch*; Control Tech.; Drake-Chenault*; Delcam*; Dubner*; East Coast; Fiorentino*; Fitzco*; Frezzolini*; General Television; Grinnan; Harris Broadcast*; HSC*; Jamieson*; Jenel; E.M. Johnson*; Kappa; Kavco*; Kitchen; Landy*; Fred A. Nudd*; QSI*; Radiotechniques; Real World*; Rees*; Rosner*; Scape; Smith Elect.*; Soll; Spencer*; VLSI; Westec; Wold*

STUDIO, SET DESIGN

SUPPLIERS: Arben*; B-W Lighting*; Center Video*; Columbia Video; East Coost; Fantasee; Fiorentino*; Global Comm.; Graphic Express*; Grash; Jamieson*; LTM*; McCurdy*; Milan*; MPCS*; Rees*; Rosco*; Tele-Measurements; Televisian Engineering*

EARTH STATION SITE SELECTION

SUPPLIERS: California Microwave; Compucon*; Comsearch*; General Television; Harris Broadcast*; Kitchen; Netcom*; Radiatechniques; Rees*; Ken Schaffer*; Wold*

MOBILE VEHICLE CONSTRUCTION

SUPPLIERS: AF Assoc.*; Audio-Video; Bell Helicopter*; Central Dynamics*; Commerce Air; Delcam*; Dyma*; E-N-G*; General Television; Gerstenslager*; Grinnan; Grumman*; Harris Broadcast*; HSC*; Hughes Helicopters*; Jenel; Kavco*; Lerro*; MBB Helicopter*; Midwest*; N-Z Video; Peirce-Phelps*; RCA Commercial*; Real World*; Rosner*; Shook*; Tele-Measurements; Television Engineering*; Wolf*

WEATHER INFORMATION

SUPPLIERS: Advanced Designs; ColorGraphics; Kavouras*; W.A. Palmer*; RAM*; Sotellite Broadcost*; Texas Elect.*; Weatherscan*; WSI*

MUSIC LIBRARY

SUPPLIERS: American Image; Toby Arnold*; Chase Media; Conner*; Continental Recording; De Wolfe; Firstcam*; Gruver; JAM*; Kala-Music*; Live Sound*; Music Director*; Network; Soper*; William B. Tanner*; Valentino

SATELLITE TIME BROKER

SUPPLIERS: Netcom*; Wold*

OTHER

SUPPLIERS: Compact Video*; Comsearch*; Conner*; Continental Plastic*; Continental Recording; Convergence*; Cross; Enstrom; Fotokem*; Generic; Graphic Express*; Grosh; Gruver; Image Transform; JAM*; Jamieson*; Kansas; Landy*; Mead Data*; PTS*; Radiotechniques; RCA American*; Rees*

www.americanradiohistory.com

CONRAC

INNER VIEW:
A closer look at Conrac Monitors

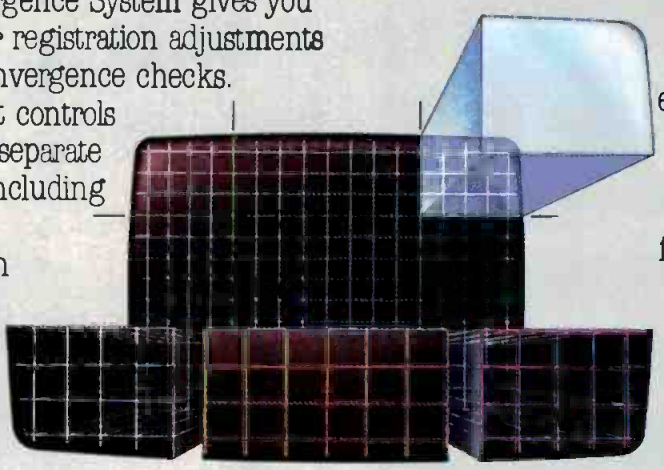
Active Convergence: Registration made simple.

Conrac's Active Convergence System gives you complete control over color registration adjustments and greatly streamlines convergence checks.

It uses 36 independent controls to individually adjust nine separate areas on the CRT screen – including corners!

You spend less time on convergence checks — and the adjustments you make will be much more accurate.

Conrac's system uses 24 operational amplifiers to independently control red, green, and blue in each screen area. Vertical and horizontal waveforms are referenced for shaping the signals that excite the convergence yoke assembly. Dynamic blue lateral convergence is achieved with operational amplifiers.



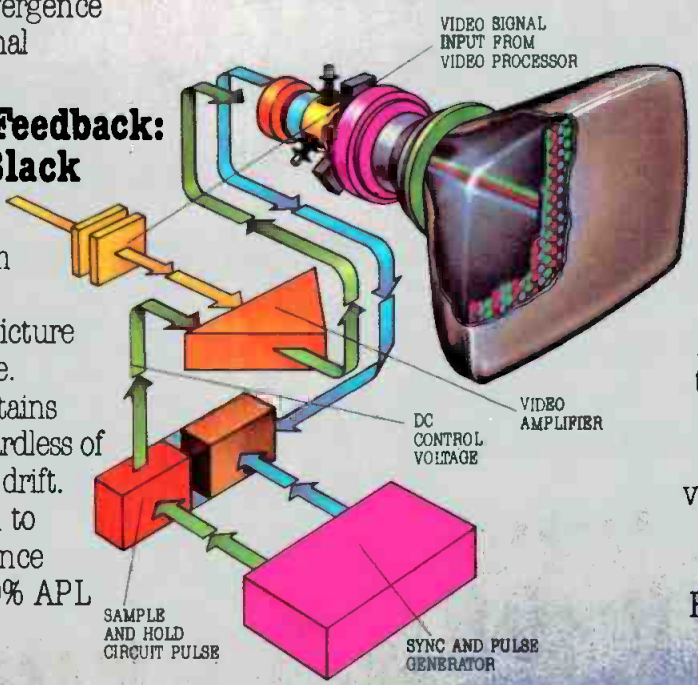
Conrac's Active Convergence system lets you adjust color registration on nine separate areas of the CRT.

Beam Current Feedback: The Ultimate in Black Level Stability.

Conrac's unique Beam Current Feedback system maintains a more stable picture for a longer period of time.

It automatically maintains black level stability — regardless of CRT aging or component drift. In fact, black level is held to within 1% of peak luminance level between 10% and 90% APL (Average Picture Level).

Conrac's exclusive Beam Current Feedback system automatically maintains black level stability.


VIDEO SIGNAL INPUT FROM VIDEO PROCESSOR
VIDEO AMPLIFIER
DC CONTROL VOLTAGE
SAMPLE AND HOLD CIRCUIT PULSE
SYNC AND PULSE GENERATOR

Conrac's unique system uses a keyed back porch video amplifier and beam current sensing that occurs during the vertical interval. The video signal is ac coupled to the video amplifier, thus eliminating the dc component and retaining the level between black and white. It is then amplified and applied to G1 of the CRT. The feedback loop is completed when a sample cathode current (gated by the brightness pulse) is applied to a sample and hold circuit. If the cathode current changes for any reason, the video amplifier's dc level is automatically adjusted. Result: reference black level will remain constant.

Conrac Technology: 30 years of leadership.

Conrac's track record of technical innovation stretches back nearly three decades. And what we've learned since then goes into every monitor we make today. That's important to you. Because the more technology we pack into each monitor, the more performance you'll receive from it. Active Convergence and Beam Current Feedback are just two ways Conrac technology can save you time and money.

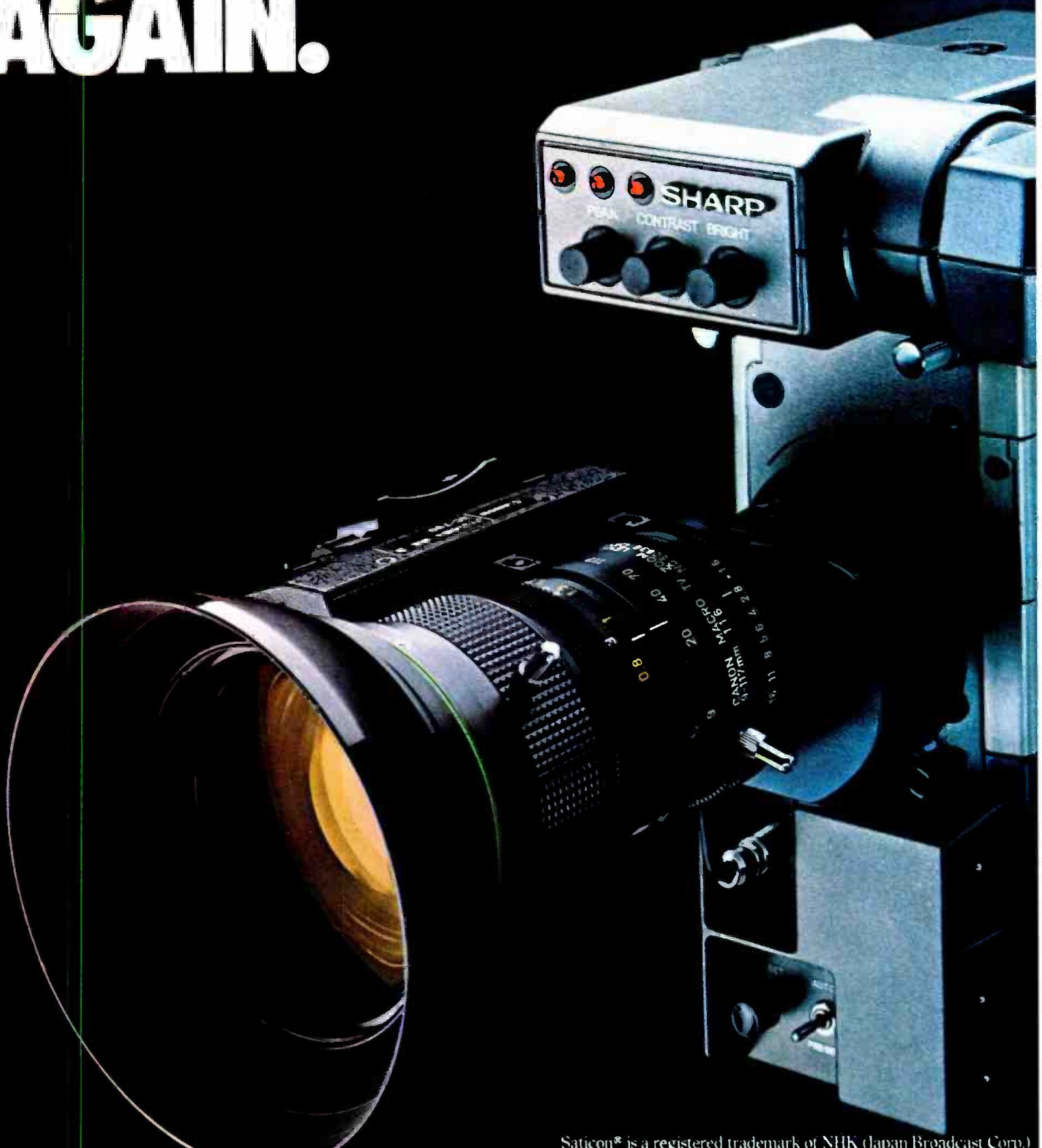
For the complete inner view of Conrac technology, call or write us today: Conrac Division, Conrac Corporation, 600 North Rimsdale Ave., Covina, CA 91722, Telephone: (213) 966-3511, Telex: 67-0437

Quality you can take for granted.

Circle 140 on Reader Service Card

www.americanradiohistory.com

INTRODUCING THE XC EVERYONE ELSE OUT AGAIN.



Saticon® is a registered trademark of NHK (Japan Broadcast Corp.)
Plumbicon® is a registered trademark of N.V. Philips.

www.americanradiohistory.com

-800. SHARP® TAKES OF THE PICTURE.

While everyone else is introducing a mid-priced camera, Sharp introduces a whole new generation.

The Saticon II Generation.

The Sharp XC-800 is the first camera priced under $13,000 with Saticon II Tubes.

That means it's the first camera in its class that combines Saticon® strengths with a Plumbicon® plus.

So unlike conventional Saticons, you get substantially less highlight sticking, even when you pan across bright lights.

And you still get the higher resolution and depth of modulation Saticons are known for.

But that's just the beginning.

Pound for pound, feature for feature, nothing comes close to the new Sharp XC-800. It's lightweight and perfectly balanced.

And while we're proud of our new on-board computer, and newly designed Remote Operations Panel with serial data transmission and black stretch, the name of our game is more than just features.

It's reliability.

That's what the pros were looking for when we introduced the original XC-700, the first mid-priced camera that didn't perform like a mid-priced camera.

In fact, it performed so well, there are over a thousand of them out in the field today.

And it's been so successful, it's encouraged a rash of new mid-priced cameras.

We encourage you to compare any of them with the new Sharp XC-800.

Between the Saticon II breakthrough and everything else, nobody offers more camera for the money. For more information, contact your local dealer, or write: Sharp Electronics Corporation, Professional Products, 10 Sharp Plaza, Paramus, New Jersey 07652.

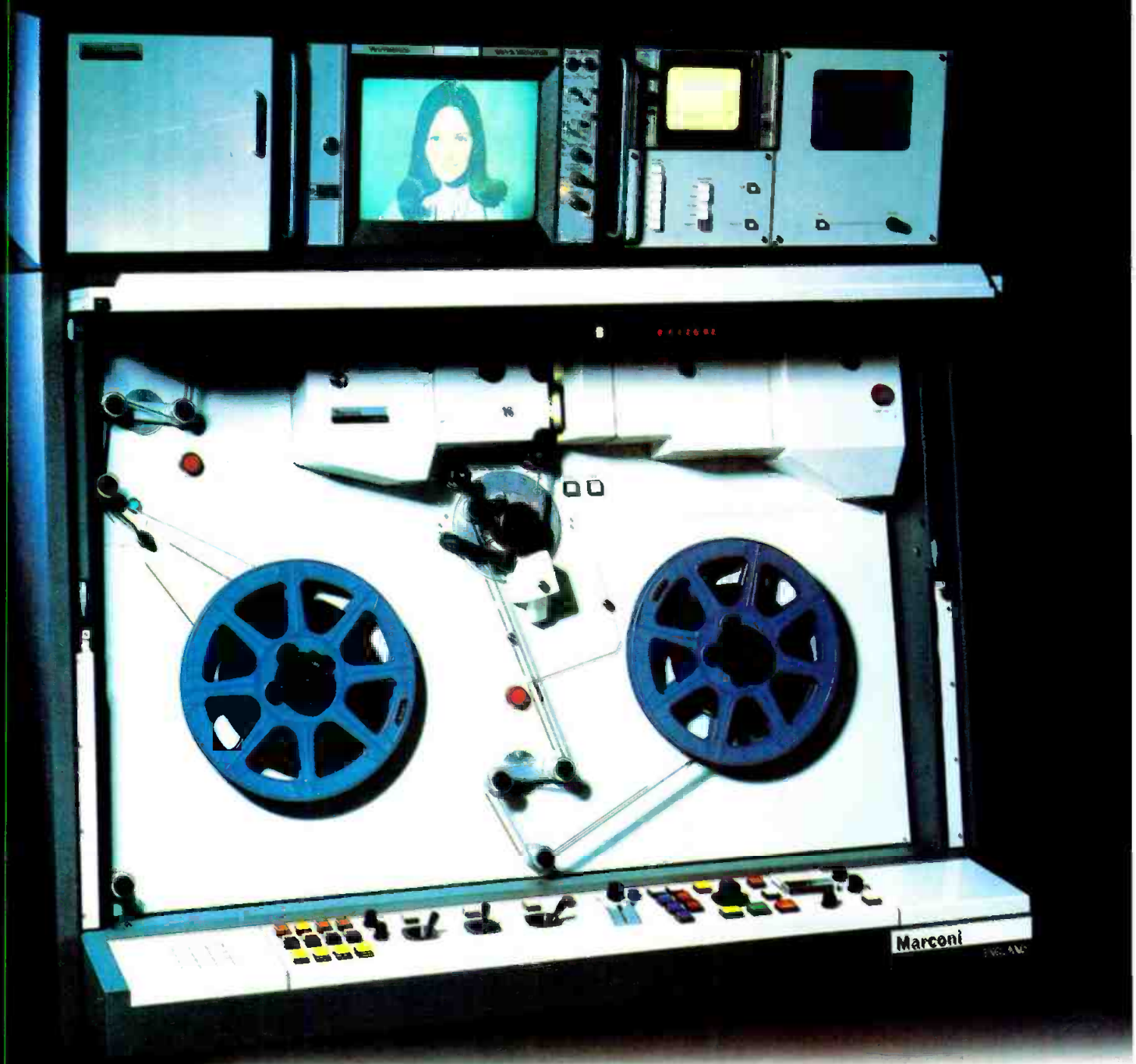
SHARP®

FROM SHARP MINDS COME SHARP PRODUCTS

Circle 141 on Reader Service Card

www.americanradiohistory.com

It deserves an Oscar



The New Marconi Line Array Telecine B3410

For a remarkable contribution to film in TV, Marconi's new Line Array Telecine B3410 fully deserves its great reputation.

The unique combination of full digital processing with micro-processor control and CCD sensors means exceptional picture quality, shorter set-up times, rapid change of TV standards, long life and minimum maintenance. No tubes, no replacements!

Also offering fast change of film gauge and full resolution Cinemascope, this most outstanding newcomer is available for swift delivery at a highly competitive price.

For full details contact: Marconi Electronics Inc. (John White or Simon Frazer) Tel: (201) 767-7250 or A.F. Associates Inc. Rich Lunniss Tel: (201) 767-1000.

Marconi
Electronics Inc.

100 Stonehurst Court, Northvale, New Jersey 07647. U.S.A. Tel: 767-7250, Telex: 710-991-9752.

Circle 142 on Reader Service Card

www.americanradiohistory.com

Alphabetical Listing of Manufacturers

ACCURATE SOUND CORP. ★
3515 Edison Way, Menlo Park, CA 94025
415 365-2843
High-speed audio tape duplicators.

ACOUSTIC RESEARCH ★
10 American Dr., Norwood, MA 02062
617 769-4200
Monitor speakers.

ACRODYNE INDUSTRIES ★
516 Township Line Rd., Blue Bell, PA 19422
800 523-2596
UHF, VHF & LPTV transmitter & translators.

ADAMS-SMITH ★
34 Tower St., Hudson, MA 01749
617 562-3801
SMPTE time code readers, generators & synchronizers.

ADC MAGNETIC CONTROLS CO. ★
4900 W. 78 St., Minneapolis, MN 55435
612 835-6800
Audio patch panels; video jackfields.

ADDA CORP. ★
1671 Dell Ave., Campbell, CA 95008
408 379-1500
Digital still stores; video compressor/positioners; TBCs, frame synchronizers, framestores. TBC/framestores.
SEE AD PG. 1
Field Offices:
CA Sheila Ross, 13952 Chelmsford, Westminster, 92683 . . . . . 714 891-3364
GA Duane Tuttle, 2693 Twigg Circle, Marietta 30067 . . . . . 404 953-1500
KS Emerson Ray, 9517 Moody Park Cir., Overland Park 66212 . . . . . 913 631-1500
MA Frank Alioto, 7 Pitman Ave., Wakefield 01880. . . . . 617 245-4602
MD Kevin Zmarthie, 207H Victor Pkwy., Annapolis 21403. . . . . 301 263-7111
MI Dick Strauss, 30310 Woodgate Dr., Southfield 48076. . . . . 313 332-1500
NY Marty Frange, 1747 Interlake Dr., Wantaugh 11793. . . . . 516 679-9033

ADM TECHNOLOGY, INC. ★
1626 E. Big Beaver Rd., Troy, MI 48084
313 524-2100
Mono, stereo, audio for TV audio studio consoles; audio DAs; PPM meters; audio patch panels.
SEE AD COVER 2
Field Offices:
CA Ron Webb, 11 Adak Ct., Walnut Creek 94596. . . . . 415 945-0181
Refer to Reps/Distribution section

ADVANCED DESIGNS CORP. ★
22B S. Franklin, Bloomfield, IN 47424
812 384-3687
Weather radar systems; engineering consultant.

ADVANCE INDUSTRIES, INC. ★
2301 Bridgeport Dr., Sioux City, IA 51102
712 252-4101
Antenna towers, tower hardware & lighting.

ADVANCED MUSIC SYSTEMS (AMS) ★
Quintek Dist. Inc.,
4721 Laurel Canyon Blvd., Suite 209, N. Hollywood, CA 91607
213 980-5717
Digital audio special effects, digital delay & reverb, analog special effects & reverb, audio/video sync delay, time compression/expansion.

ADVANCING TECHNOLOGY CORP. ★
27106 46 Ave. S., Kent, WA 98032
206 854-1004
ALC & AGC amps, AM & FM compressor/limiters; VU & PPM meters.

ADWAR VIDEO ★
100 Fifth Ave., New York, NY 10011
212 691-0976
NTSC encoder for Apple computer. Equipment rental service.

AERIAL VIDEO SYSTEMS ★
27 Eastwind, Marina Del Rey, CA 90291
213 396-7791
Airborne teleproduction facility.

AF ASSOCIATES, INC. ★
100 Stonehurst Ct., Northvale, NJ 07647
201 767-1000
One-inch VTRs (Marconi); VTR rebuilding; Marconi CCD telecine; mobile van construction, facility turnkey installation; production equipment rentals; color framer editing aid device; standards conversion & video duplication services.
SEE AD PG. 125
Field Office:
CA 1438 N. Gower St., Box 47, Hollywood 90028 . . . . . 213 466-5066

A&G PRODUCTIONS ★
1660 Hotel Circle N., Ste. 107, San Diego, CA 92108
714 291-7031
Mobile teleproduction facility; post-production facility.

A&G VIDEO ★
245 E. 84 St., New York, NY 10028
212 288-3883
Studio & mobile teleproduction facilities; post-production facilities.

AGFA-GEVAERT, INC. ★
275 North St., Teterboro, NJ 07608
201 288-4100
Open-reel & bulk cassette audio tape; ¾- & half-inch videocassettes.
SEE AD PG. 204
Field Offices:
CA 1633 Old Bayshore Hwy., Burlingame 94010. . . . . 415 692-2432
CA Will Moore, Century Pk. Plaza, 1801 Century Park East Los Angeles 90067 . . . . . 213 552-9622
GA Robert Zamoscianyk, 380 Interstate N., Suite 200, Atlanta 30339 . . . . . 404 955-4326
IL Wayne Woodhams, 2803 Butterfield Rd., Suite 200, Oak Brook 60521 . . . . 312 242-1951/312 986-9076
MA Lexington Office Center, Ste. 304-N, 33 Hayden Ave., Lexington 02173 . . . . . 617 861-6740
NJ Mark Nevejans, Twin Bridge Plaza, 24 Meadowland Pkwy., Ste. 300, Secaucus 07094 . . . . . 201 330-1800/212 947-2848
Refer to Reps/Distributors section

AIRFAX VIDEO ★
211 E. Grand, Chicago, IL 60611
312 836-0211
Studio & mobile teleproduction facilities.

AKG ACOUSTICS ★
200 Consumers Rd., Suite 105, Willowdale, Ont. M2J 4R4, Canada
416 494-1464
Time delay audio cart player/recorders; phono cartridges; digital delay & reverb, analog special effects & reverb; headphones; dynamic, electret/condenser, shotgun, lavalier, modular & capsule mics; mic stands, booms, dollies.

★ MEANS IT'S VERIFIED

AKG ACOUSTICS, INC. ★
77 Selleck St., Stamford, CT 06902
203 348-2121
Phono cartridges; digital delay, reverb; analog special effects, reverb; mechanical reverb; headphones; dynamic, electret/condenser, shotgun, lavalier, modular & capsule mics; mic stands, booms, dollies.

PETER ALBRECHT CORP. ★
325 E. Chicago St., Milwaukee, WI 53202
414 272-2811
Motorized rigging & controls for TV studio lighting & scenery systems.

ALDEN ELEC. & IMPULSE RECORDING EQUIP. CO., INC. ★
Washington St., Westboro, MA 01581
617-366-8851
Weather chart recorders; weather satellite earth station.

ALEXANDER MFG. CO. ★
1511 S. Garfield Pl., Mason City, IA 50401
515 423-8955
Nicad batteries, chargers.

www.americanradiohistory.com

ALFORD MFG. CO.
15 Sixth Rd., Woburn, MA 01801
617 935-8611
RF diplexers & antennas.

ALLEN AVIONICS, INC. ★
224 E. 2 St., Box 350, Mineola, NY 11501
516 248-8080
Video delay lines, filters; signal & cable equalizers.
SEE AD PG. 168
Refer to Reps/Distributors section

ALLIED BROADCAST EQUIPMENT ★
635 South E St., Richmond, IN 47374
317 962-8596
Audio DAs, preamps; studio furniture & cabinets.

ALLIED TOWER CO., INC. ★
12450 Old Galveston Rd., Webster, TX 77598
713 486-7691
Towers & masts; tower hardware, construction equipment, lighting.

ALL MOBILE VIDEO, INC. ★
630 Ninth Ave., New York, NY 10036
212 757-8919
Equipment rental services, including mobile units; video production & post-production facility.

ALLSOP, INC. ★
Box 23, Bellingham, WA 98227
206 734-9090
Audio tape, cassette cleaners; video head cleaners; record cleaners.

ALPHA AUDIO ★
2049 W. Broad St., Richmond, VA 23220
804 358-3852
Sonex soundproofing material.
SEE AD PG. 29

ALPHA WIRE CORP.
711 Lidgerwood Ave., Box 711, Elizabeth, NJ 07207
201 925-8000
Wire & cable; cable connectors; tubing.

ALTEC LANSING ★
1515 Manchester Ave., Anaheim, CA 92803
714 774-2900
Graphic equalizers; monitor speakers; dynamic, electret/condenser, lavalier mics; audio preamps, line amps, monitor & power amps.

AMBER ELECTRO DESIGN, INC. ★
4810 Jean Talon W., Montreal, Que. H4P 2N5, Canada
514 735-4105
Audio test signal generators, harmonic distortion meters, IM meters, spectrum analyzers; dB meters.

AMCO ENGINEERING CO. ★
3801 N. Rose St., Schiller Park, IL 60176
312 671-6670
Studio furniture, consoles, 19-inch equipment racks.

AMDAX CORP. ★
160 Wilbur Pl., Bohemia, NY 11716
516 567-7887
Data modems for CATV; local area communications network.

A.M.E., INC. ★
2921 W. Olive Ave., Burbank, CA 91505
213 841-7440
Video post-production facility.

AMERICAN DATA CORP.
See listing for CENTRAL DYNAMICS CORP.

AMERICAN IMAGE PRODUCTIONS, INC.
Box 23355, Nashville, TN 37202
800 251-2058
Syndicated radio programming; music library; recording studio.

AMERICAN LASER SYSTEMS, INC. ★
106 James Fowler Rd., Goleta, CA 93117
805 967-0423
Remote control systems; infrared TV transmission system; wideband current probe.

AMILON CORP. ★
49-12 30 Ave., Woodside, NY 11377
212 274-1794
Audio cassette transports.

AMPEREX ELECTRONIC CORP. ★
Providence Pike, Slatersville, RI 02876
401 762-3800
Camera pickup tubes; RF power tubes; vacuum tubes, solid state components, rectifiers.
SEE AD PG. 109
Field Offices:
CA Ed Marchner, Ste. 115, Santa Clara 95050 . . . . . 408 249-1134
CO Ron Barnes, 3110 South Wadsworth, Denver 80227 . . . . . 303 989-7310
GA Lee Knowell, 3731 North Crest Rd., Atlanta 30340 . . . . . 404 458-2519
NY Kipp Rabbitt, 230 Duffy Ave., Hicksville 11802 . . . . . 516 931-6200
TX Greg Gambill, 13773 North Central Exy., Dallas 75243 . . . . . 214 231-3481
Refer to Reps/Distributors section

AMPEX CORP. ★
401 Broadway, Redwood City, CA 94063
415 367-2011
Portable, studio & multitrack ATRs; replacement & rebuilt audio heads. Studio, ENG/EFP, single-piece cameras. Quad & one-inch C VTRs; video cart automation systems; replacement & rebuilt video heads; VTR rebuilding service; video head cleaners & degaussers; VTR slow-mo controller. Digital still stores. Large, microprocessor-controlled & compact production switchers; post-production switchers; digital effects processors; manual & automated master control switchers. Editor/controllers & multisource editors; SMPTE time code generators, readers; TBCs.
SEE AD PG. 19
Field Offices:
CA 10435 N. Tantau Ave., Cupertino 95014 . . . . . 408 255-4800
CA 500 Rodier Dr., Glendale 91201 . . . . . 213 240-5000
GA 3135 Chestnut, Atlanta 30340 . . . . . 404 451-7112
IL 719 W. Algonquin Rd., Arlington Heights 60005 . . 312 222-0437
MD 10215 Fernwood Rd., Bethesda 20034 . . . . . 710 828-9689
NJ 5 Pearl Court, Allendale 07401 . . . . . 201 825-9600
TX 1615 Prudential Dr., Dallas 75235 . . . . . 910 861-4967

AMPEX CORP. MAGNETIC TAPE DIV. ★
401 Broadway, Redwood City, CA 94063
415 367-3809
Open-reel audio tape & cassettes; one-inch, two-inch, half-inch & ¾-in videotape & cassettes; empty reels, cases, cassettes.
SEE AD PG. 137

AMPRO/SCULLY ★
2693 Philmont Ave., Huntingdon Valley, PA 19006
215 947-7000
Mono & stereo studio consoles; single, dual & triple audio cart player/recorders, phase control matrixing; 2,4-track & multitrack studio ATRs.

AMTEL SYSTEMS, INC.
29-16 Connell Ct., Toronto, Ont. M8T 5T7, Canada
416 251-3355
SMPTE time code generators, readers; safe title area & countdown generators; digital clocks, master & slave clocks, timers, time distribution.

AMTRON CORP. ★
Box 1150, 5620 Freedom Blvd., Aptos, CA 95003
408 688-4445
Sync generators; mono, NTSC color & RGB video monitors; video test signal generators.

★ MEANS IT'S VERIFIED

ANALOG DEVICES, INC.
Box 280, Norwood, MA 02062
617 329-4700
Video A/D & D/A converters.

ANCHOR SYSTEMS, INC.
4510 Federal Blvd., San Diego, CA 92102
714 262-9901
Audio monitors for TV.

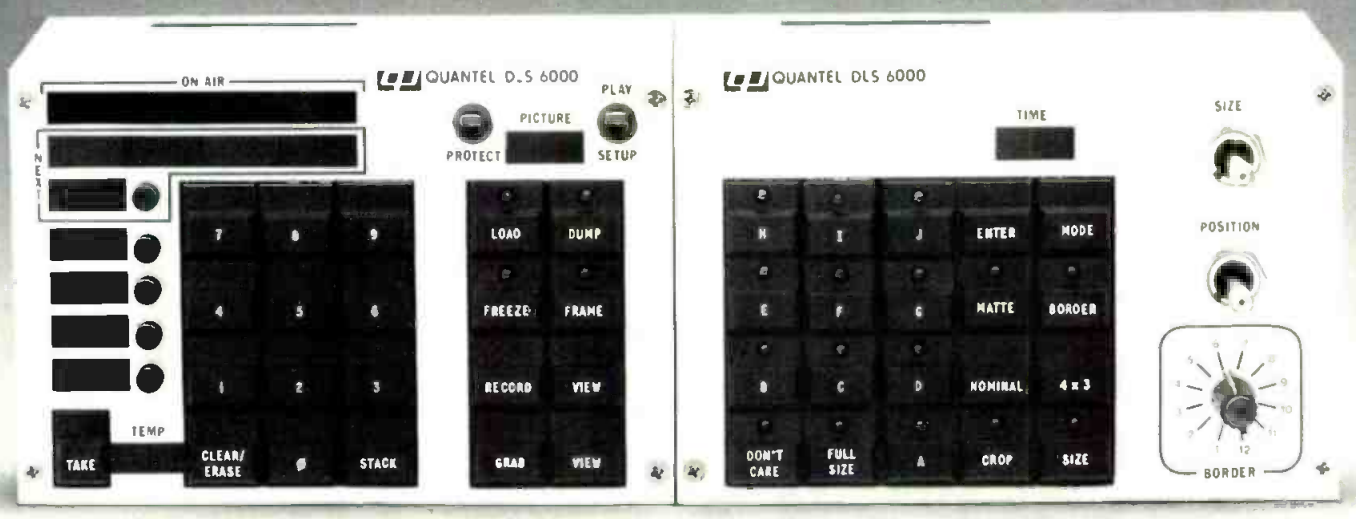
ANDREW CORP. ★
10500 W. 153 St., Orland Park, IL 60462
312 349-3300
Transmit/receive, receive only & transportable satellite earth stations; intercity & portable ENG microwave; microwave, satellite & waveguide STLs; HP & CP TV antennas; microwave, satellite dish & communications antennas; solid core, foam dielectric & fiberoptic transmission line.

ANGENIEUX, INC. ★
120 Derry Rd., Hudson, NH 03051
603 880-1710
Camera lenses & lens extenders; equipment rental service.
SEE AD PG. 167
Field Offices:
CA 13381 Beach Ave., Venice 90291 . . . . . 213 821-5080
CN 190 Don Park Rd., Unit 2, Markham, Ontario L3R 2V8 . . . . . 416 475-5454

ANIMATION VIDEO, DIV. CONVERGENCE CORP. ★
1644 McGaw, Irvine, CA 92714
714 549-3146
Video animation system.

www.americanradiohistory.com

The Quantel DLS 6030.



Every other way to store stills is obsolete.

Introducing the state-of-the-art in electronic still-storage—the Quantel DLS 6030 digital library system.

Obviously it stores still pictures. Up to 800 on each small Winchester disk drive. And with the quality that is a hallmark of Quantel. But the DLS 6030 goes far beyond still-storage.

It is the only electronic still-store with production effects capabilities. So now you can compress still pictures to any size. Crop them to remove unwanted material. Position them anywhere you want. Put borders around them. And dissolve from one shot to the next.

You can even build up totally new pictures—composites or montages—from existing material.

And you can always retain your "originals" in their pristine state.

The DLS 6030 lets you browse through its disk library to select the pictures you need, and gives you unprecedented facilities for on-air editing, previewing, and presentation.

Off-loading? You can dump all the pictures—*in digital form*—onto standard videotape. Then reload at the remote site via any VTR. The transfer is digital, so there's no generation loss.

Because Quantel's technology is leading-edge, the DLS 6030 is small—about one-quarter the size of still-stores using older technology—and draws far less power. So it's ideal for mobile operations as well as the studio.

There's nothing else like it. See for yourself. Call your local MCI/Quantel representative. Or get in touch with us directly at 415/856-6226. Micro Consultants, Inc., P.O. Box 50810, Palo Alto, California 94303.

MCI/QUANTEL

The digital video people.

MCI/Quantel is a trademark of Micro Consultants, Inc.

Circle 143 on Reader Service Card

www.americanradiohistory.com

ANIXTER-MARK
2180 S. Wolf Rd., Des Plaines, IL 60018
312 298-9420
Transmit/receive, receive only & transportable satellite earth stations; intercity & portable ENG microwave, microwave, satellite dish & communications antennas; foam dielectric transmission line.

R.B. ANNIS CO. ★
1101 N. Delaware St., Indianapolis, IN 46202
317 637-9282
Audio & video head degaussers & bulk erasers; calibrated magnetic field indicators.

ANTENNAS FOR COMMUNICATIONS, INC. ★
486 Cypress Rd., Ocala, FL 32672
904 687-4121
Microwave antennas.

ANTENNA TECHNOLOGY CORP.
895 Central Florida Pky., Orlando, FL 32809
305 851-1112
Transmit/receive, receive only & transportable satellite earth stations; airborne microwave.

ANTON/BAUER, INC. ★
1 Controls Dr., Shelton, CT 06484
203 929-1100
Nicad & silver-zinc batteries & chargers; ac power dividers. Camera remote control system.
SEE AD PG. 92
Refer to Reps/Distributors section

ANVIL CASES, INC. ★
4128 Temple City Blvd., Rasemead, CA 91770
213 575-8614
Foam insert & rack configuration transportation cases.

APERT-HERZOG CORP. ★
7007 Realm Dr. (B3), San Jose, CA 95117
408 225-1425
Digital still stores; frame synchronizers; logic analyzers.

APHEX SYSTEMS, LTD. ★
7801 Melrose Ave., Las Angeles, CA 90046
213 655-1411
AM & FM compressor/limiters; parametric equalizers; Aphex Aural Exciter.

APPLELOG
357 N. Main St., Butler, PA 16001
412 283-1500
Radio business automation hardware; automated traffic/billing.

APPLIED DIGITAL TECHNOLOGY ★
17 E. 96 St., New York, NY 10028
212 289-8660
SMPTE time code synchronizers.

ARBEN DESIGN ★
9870 Derby Lane, Westchester, IL 60153
312 345-1545
Modular news, studio sets; scenery construction; props, materials; studio, set design.

ARISTOCART, DIV. WESTERN BROADCASTING ★
1960-505 Burrard St., Vancouver, BC V7X 1M6 Canada
604 687-2844
Audio carts & test tapes, empty reels & carts; cart storage units.
SEE AD PG. 12
Refer to Reps/Distributors section

TOBY ARNOLD & ASSOC. ★
4255 LBJ, Suite 156, Dallas, TX 75234
214 661-8201
Syndicated radio programming; music library.

ARRAKIS SYSTEMS
1713 Willax Ct., Fort Collins, CO 80524
303 221-2918
Mic mixers, portable audio consoles, stereo & mono studio consoles; preamps, line, monitor & power amps; audio DAs, amp power supplies; VU & LED audio level indicators.

ARRIFLEX CORP. ★
500 Route 303, Blauvelt, NY 10913
913 353-1400
Cine cameras; tripods, heads & stabilizing systems; HMI lighting fixtures; lighting stands & rigging; nicad batteries, chargers.

ARTEL COMMUNICATIONS CORP. ★
Box 100, Worcester, MA 01602
617 752-5690
Remote pickup equipment; fiberoptic STLs; fiberoptic transmission line.

★ MEANS IT'S VERIFIED

ARVIN/DIAMOND
4465 Coonpath Rd., Carroll, OH 43112
614 756-9222
Weather satellite receivers.

ASACA/SHIBASOKU CORP. OF AMERICA ★
12509 Beatrice St., Las Angeles, CA 90066
213 827-7144
Monochrome video cameras; videotape cleaners & evaluators; portable & compact studio/mobile production switchers; standalone video effects generators; downstream keyers; sync, black burst, color bar & multiburst generators; NTSC encoders; NTSC, RGB & dc portable monitors; monitor calibrators; audio test signal generators, harmonic distortion meters; video test signal generators, automatic VITS analyzers, video noise meters.
SEE AD PG. 82
Refer to Reps/Distributors section

ASHLY AUDIO, INC. ★
100 Fernwood Ave., Rochester, NY 14621
716 544-5191
FM compressor/limiters; parametric equalizers; noise reduction; electronic crossovers; engineering consultant.

ASTATIC CORP.
Box 120, Conneaut, OH 44030
216 593-1111
Phono cartridges & pickup arms; dynamic, electret/condenser & lavalier mics; mic stands, booms & dollies.

ASTIN/ZAPPIA ★
3501 Cahuenga Blvd. W., Las Angeles, CA 90068
213 876-8008
Video post-production facility.

ASTRO VIDEO SERVICES ★
61 W. Erie St., Chicaga, IL 60610
312 280-5520
Video post-production facility.

ATI (AUDIO TECHNOLOGIES, INC.) ★
328 W. Maple Ave., Horsham, PA 19044
215 443-0330
Phono preamps; ALC & AGC amps, AM & FM compressor/limiters; parametric equalizers; noise reduction; audio preamps, line, monitor & power amps; audio DAs; amp power supplies; VU meters; audio patch panels, jackfields.
SEE AD PG. 224
Refer to Reps/Distributors section

ATLANTIC RESEARCH CORP.
5390 Cherokee Ave., Alexandria, VA 22314
703 642-4000
Portable, mono & stereo studio, automated & audio for TV mixing consoles; AM & FM compressor/limiters, parametric & graphic equalizers; slide attenuators; audio patch panels.

ATLAS SOUND ★
10 Pomeroy Rd., Parsippany, NJ 07054
201 887-7800
Monitor speakers; mic stands, booms & dollies; lighting stands & rigging.

ATLAS TOWER CORP. ★
227 South Vann, Box 972, Vinita, OK 74301
918 256-7883
Towers, masts, tower hardware & construction equipment, tower lighting.

AUBURN INSTRUMENTS ★
34 Lodge Rd., Newton, MA 02165
617 332-7747
Parallel interface machine control system; digital blanking meter.

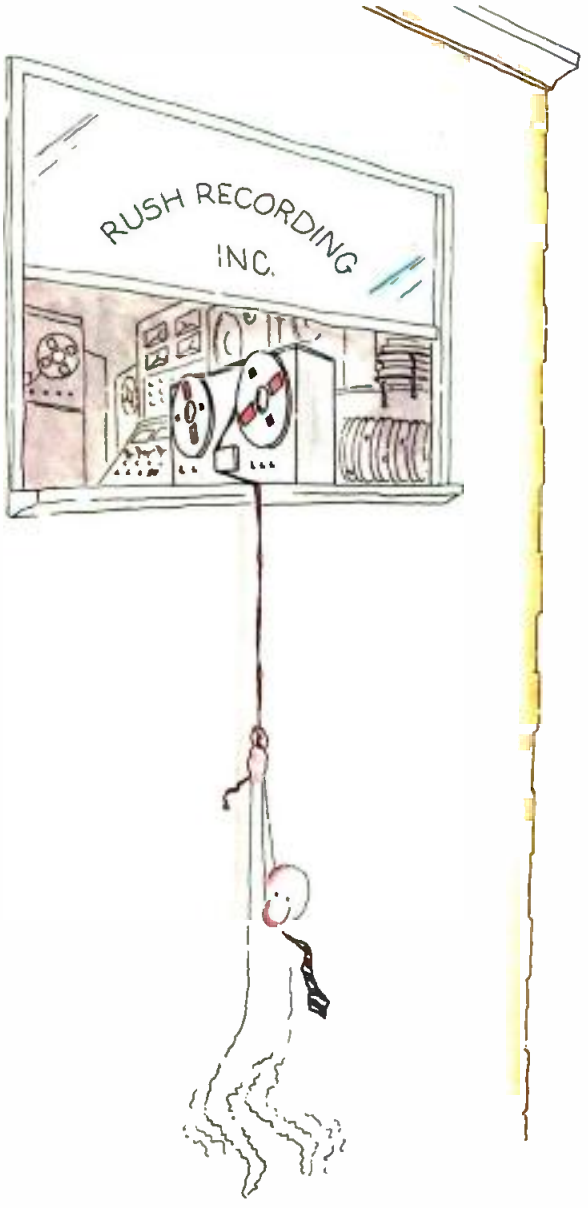
AUDICO, INC. ★
219 Crossen Ave., Elk Grove, IL 60007
312 640-1030
Audio tape loaders, timers & rewinders; cassette labels; videotape loading systems; tape unloader; videotape cleaner & evaluator.

AUDI-CORD CORP.
1845 W. Hovey Ave., Normal, IL 61761
309 452-9461
Single, dual/triple & time delay audio cart player/recorders; replacement audio heads.

AUDIO ACCESSORIES, INC. ★
Mill St., Marlow, NH 03456
603 446-3335
Audio patch panels, telephone jacks, patch cords, jackfields.

AUDIOARTS ENG., DIV. WHEATSTONE CORP. ★
5 Collins Rd., Bethany, CT 06525
203 393-0887
Portable audio consoles, stereo & mono studio consoles; FM compressor/limiters; parametric & graphic equalizers.

www.americanradiohistory.com



Audio engineers who try Maxell won't let go.

Maxell quality saves a lot of recording situations. Maxell meets your ¼" open reel and audio cassette needs, no matter how demanding you are. Because we're more demanding. We've developed a name that means unique quality all around the world. For example, Maxell cassettes give you a productivity boosting four-function leader with A/B side indications, directional arrows, non-abrasive head cleaner and five-second cue to set timing and level.

You can see Maxell excellence in the cassette construction and on the 'scope or meter. The physical construction is strong enough to meet all professional requirements. Maxell open reel tape and cassettes give you quality you can hear. And your clients can hear as well.

We'll give you all the technical information you need to form your own opinions. But if you're like just about every audio professional that tries Maxell, you won't let go. Remember, we warned you!

maxell®

PROFESSIONAL/INDUSTRIAL DIVISION

Our success is magnetic.

Maxell Corporation of America, 60 Oxford Dr., Moonachie, N.J. 07074 (201) 440-8020

Circle 144 on Reader Service Card

www.americanradiohistory.com

AUDIO + DESIGN ★
Box 786, Bremerton, WA 98310
800 426-6170
ALC & AGC amps, AM & FM compressor/limiters, parametric & graphic equalizers, analog special effects & reverb, audio noise reduction. de-esser; audio preamps, audio DAs; VU, PPM & LED meters.

AUDIO KINETICS, INC.
4721 Laurel Canyon Blvd., Suite 209, N. Hollywood, CA 91607
213 980-5717
SMPTE time code generators & readers; Quintek time code synchronizers.

AUDIONICS OF OREGON ★
934 NE 25, Portland, OR 97232
503 239-5343
ATR replacement electronics; phono preamps; multichannel audio synthesis; monitor & power amps.

AUDIO PROCESSING SYSTEMS, INC.
40 Landsdowne St., Cambridge, MA 02139
617 354-1144
Portable audio consoles, mono & stereo studio consoles, automated consoles; parametric & graphic equalizers; VU & PPM meters.

AUDIO-TECHNICA U.S., INC. ★
1221 Commerce Dr., Stow, OH 44224
216 686-2600
TV audio consoles; pickup arms, phono cartridges, record cleaning & care; headphones; dynamic, electret/condenser, shotgun & lavalier mics.

AUDIO TECHNIQUES, INC. ★
652 Glenbrook Rd., Stamford, CT 06906
203 359-2312
Audio equipment rentals, facility turnkey installations.

AUDIO TECHNOLOGY
1169 Tower Rd., Schaumburg, IL 60195
312 885-0066
Audio noise reduction; VU, PPM & LED meters; dB meters.

AUDIO/TEK, INC. ★
502-D Vandell Way, Campbell, CA 95008
408 378-5586
Audio tape duplicators; tape loaders.

AUDIOTRONICS CORP. ★
7428 Bellaire Ave., N. Hollywood, CA 91605
213 765-2645
Audio cassette player/recorders. Monochrome video monitors, data display monitors.

AUDIO-VIDEO CORP.
213 Broadway, Menands, NY 12204
518 449-7213
Equipment rental service; audio & video post-production facility; recording studio; facility turnkey installations; engineering consultant; mobile vehicle construction.

AUDISAR
Box 1561, Bellevue, WA 98009
206 454-2040
Mic mixers, portable audio consoles; phono preamps; parametric & graphic equalizers; monitor speakers; telco interface equipment; audio preamps, line, monitor & power amps, audio DAs; audio patch panels; audio test signal generators; voltmeters, multimeters; transformers.

AUDITRONICS, INC. ★
3750 Old Getwell Rd., Memphis, TN 38118
901 362-1350
Mono, stereo, automated & TV audio studio consoles; audio preamps, line amps, audio DAs; audio patch panels.
SEE AD PG. 70-71,172
Refer to Reps/Distributors section

AUERNHEIMER LABS & CO. ★
4561 E. Florence Ave., Fresno, CA 93725
209 442-1048
Monitor speakers.

AURATONE CORP. ★
Box 698, Coronado, CA 92118
714 297-2820
Monitor speakers.

★ MEANS IT'S VERIFIED

AURORA SYSTEMS ★
185 Berry St., San Francisco, CA 94107
415 777-2288
Digital art/paint systems with character generators, camera/VTR digitizers, weather symbol inserters; standalone video effects generators.
SEE AD PG. 103

AUTOGRAM CORP. ★
Box 456, 631 J Pl., Plano, TX 75074
214 424-8585
Mono, stereo, automated, TV audio studio consoles; audio test signal generators.

AUTOMATED BROADCAST CONTROLS, INC.
9155 Brookville Rd., Silver Spring, MD 20910
301 587-3505
Complete program automation systems, radio business automation hardware.

AUTOMATED BUSINESS CONCEPTS, DIV. CETEC
1110 Mark Ave., Carpenteria, CA 93013
805 684-7186
Radio business computer systems (MAPS).

AUTOMATION TECHNIQUES, INC. ★
1846 N. 106 E. Ave., Tulsa, OK 74116
918 836-2584
Black burst, color bar generators; video proc amps. Receive only satellite earth stations.

AVAB AMERICA, INC. ★
967 Howard St., San Francisco, CA 94103
415 421-3562
Lighting control boards, dimmer packs.

AVA ELECTRONICS
4000 Bridge St. Drexel Hill, PA 19026
215 284-2500
DAs, line extenders; coax connectors; camera & lens accessories; RF amps, attenuators & filters; RF cable & connectors; TV combiners.

AVANTEK, INC.
3175 Bowers Ave., Santa Clara, CA 95051
408 727-0700
Microwave STLs; CATV test equipment; earth station LNAs, earth station receiver.

AVL DIGITAL, LTD.
70 Milner Ave. Unit 5, Scarborough, Ont. M1S 3P8, Canada
416 298-6220
Monitor & power amps, audio DAs. Parallel & serial interface routing switchers; sync, black burst, multiburst, countdown generators; video pulse amps & DAs. Video test signal generators.

AVONIX VIDEO SYSTEMS, INC.
Box 505, Brookfield, WI 53005
414 784-1800
Video systems for production, post-production, ENG/EFP; automated video programming systems; video projection systems.

AVT TELEVISION PRODUCTIONS ★
1466 Amherst Rd., Knoxville, TN 37919
615 584-2166
Mobile teleproduction facility.

BACH AURICON, INC. ★
6900 Romaine St., Hollywood, CA 90038
213 462-0931
Sprocketed magnetic film transports, dubbers; cine cameras.

WILLIAM BAL CORP. ★
947 Newark Ave., Box 875, Elizabeth, NJ 07207
201 354-9625
Foam insert & rack configuration transportation cases.

BALD MOUNTAIN LAB ★
230 Bellevue Rd., Troy, NY 12180
518 279-9753
Audio test signal generators; dB meters; frequency measurement services.

BARBIZON
426 W. 55 St., New York, NY 10019
212 586-1620
Lighting equipment including lamps, HMI & quartz fixtures, lighting stands, connectors, dimmers. Lighting equipment rentals.

BARDA ELECTRONIC, INC. ★
5180 Queen Mary Rd. #410, Montreal, Que. H3W 3E7 Canada
514 486-1186
Character generators, titlers.

BARDWELL & McALISTER, INC. ★
7051 Santa Monica Blvd., Hollywood, CA 90038
213 466-9361
Lighting equipment including lamps, quartz fixtures, stands & rigging, cyc lighting.

BARKER & WILLIAMSON
10 Canal St., Bristol, PA 19007
215 788-5581
Communications antennas; RF power meters.

BASF SYSTEMS CORP. ★
Crosby Dr., Bedford, MA 01730
617 271-4000
Open reel & cassette audio tape; test tapes; videocassettes.

www.americanradiohistory.com

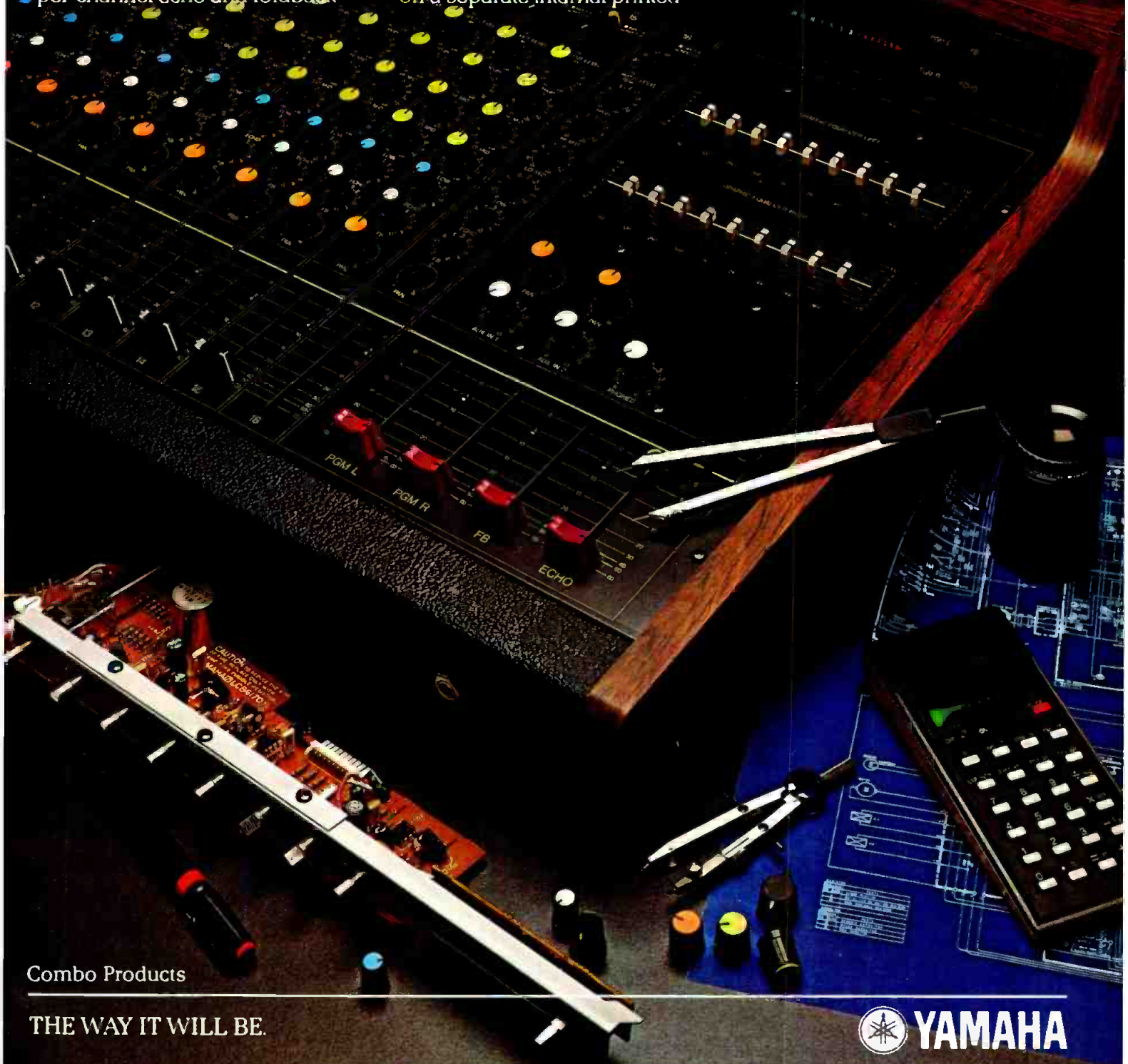
RIGHT ON THE MONEY.

Introducing the MQ-Series. A new line of highly affordable mixers that refuse to compromise with audio performance. Or with your needs.

You get the tonal flexibility of a 4-band EQ on each channel and the added flexibility of per-channel echo and foldback sends. Plus a pair of master-program 9-band graphic equalizers. And direct interface flexibility with per-channel dual input switching.

There's also the dependability and service convenience of a modular layout with each channel's components mounted on a separate internal printed circuit board. The MQ-Series. Right on the money, right down the line.

Visit your Yamaha dealer or write us for more information. Yamaha, Box 6600, Buena Park, CA 90622. In Canada, Yamaha Canada Music Ltd., 135 Milner Ave., Scarb., Ont. M1S 3R1.



Combo Products

THE WAY IT WILL BE.

YAMAHA

Circle 145 on Reader Service Card

www.americanradiohistory.com

BASYS, INC.
4960 Hamilton Ave., San Jose, CA 95130
408 866-8117
Radio & TV newsroom computer systems.

BAYLY ENGINEERING, LTD. (AEG-TELEFUNKEN) ★
167 Hunt St., Ajax, Ont. L1S 1P6 Canada
416 683-8200
Portable audio consoles; audio preamps, line, monitor & power amps, DAs; RF amps; surge protectors; FM exciters; FM, VHF, UHF transmitters; telco STLs; 2-way communications systems; equipment racks.

BAY AREA MOBILETAPE ★
1031 E. San Carlos Ave., San Carlos, CA 94070
415 593-7124
Mobile teleproduction facility; post-production facility.

BEAVERONICS, INC. ★
8 Haven Ave., Port Washington, NY 11050
516 883-4414
Large, compact & small production switchers; post-production switchers; SEGs; RGB chromakeyers; title & downstream keyers. Master/slave clocks.

★ MEANS IT'S VERIFIED

BELAR ELECTRONICS LABORATORY, INC. ★
Box 826, Devon, PA 19333
215 687-5550
AM stereo exciters; RF amps; demodulators; FM, TV SCA equip.; frequency monitors.
SEE AD PG. 212

BELDEN COMMUNICATIONS, INC. ★
534 W. 25 St., New York, NY 10001
212 691-1910
Lighting equipment including lamps, CSI & quartz fixtures, stands, dimmers & control packs; diffusion material, gels. Lighting equipment rentals.

BELL AUDIO SYSTEMS, INC.
994 Freeway Dr. N., Columbus, OH 43229
614 846-2766
Audio dist., preamp, power, PA amps; tape cart player/recorders.

BELL HELICOPTER/TEXTRON, INC. ★
Box 482
Ft. Worth, TX 76101
817 280-2222
Helicopters.

BELL & HOWELL (AV PRODUCTS DIV.) ★
7100 McCormick Rd., Chicago, IL 60645
312 262-1600
16mm, slide, filmstrip projectors. Microprocessor control systems, software.

BEST AUDIO ★
5422 Fair Ave., N. Hollywood, CA 91601
213 763-2378
Production & post-production equipment rentals; audio post-production services; TV audio remote units.

BESTON ELECTRONICS INC./BEI ★
15315 S. 169 Highway, Box 937, Olathe, KS 66061
913 764-1900
Character generators; video countdown generators; automatic weather/time displays; teleprompters; automatic telecine light controls, projectors.

BEYER DYNAMIC, INC. ★
5-05 Burns Ave., Hicksville, NY 11801
516 935-8000
Headphones; full line of mics including RF models; mic stands, booms, fixtures.
SEE AD PG. 213
Field Office:
NY 5-05 Burns Avenue,
Hicksville 11801 . . . . . 516 935-8000
Refer to Reps/Distributors section

BG ENGINEERING ★
632 Commercial St., San Francisco, CA 94111
415 444-5986
Digital tape timers.

BGW SYSTEMS, INC.
13130 S. Yukon, Hawthorne, CA 90250
213 973-8090
Audio monitors, power amps; crossovers.

B&I ELECTRONICS ★
111 Perimeter Rd., Donaldson Industrial Park, Greenville, SC 29605
803 277-5985
Teletype word recognizer.

BIRD ELECTRONIC CORP. ★
30303 Aurora Rd., Salon, OH 44139
216 248-1200
RF attenuators, filters, loads, switches. RF power meters, calorimeters, power monitors/alarms.

BIRNS & SAWYER, INC. ★
1026 N. Highland Ave., Hollywood, CA 90038
213 466-8211
Cine cameras, lenses, filters, accessories; film editing equipment. Tripods, heads, dollies. Lighting equipment including quartz fixtures, gels, filters. Portable teleprompters. Equipment rental services.

BIW CABLE SYSTEMS, INC. ★
65 Bay Street, Boston, MA 02125
617 265-2102
Video, audio, lighting/ac, RF cable & connectors.

BLONDER-TONGUE LABS, INC. ★
One Jake Brown Rd., Old Bridge, NJ 08857
201 679-4000
RF amps, loads, filters; FM, TV antennas; PTV, CATV, MATV systems; TV demodulators, receiving modulators, dist. amps.

BOGEN PHOTO, INC. ★
100 S. Van Brunt St., Englewood, NJ 07631
201 568-7771
Tripods & heads; still photographic equipment.

BOGNER BROADCAST EQUIPMENT CORP. ★
401 Railroad Ave., Westbury, NY 11590
516 997-7800
FM, TV (HP and CP), microwave antennas; MDS down convertors.

BONNEVILLE BDCST. CONSULTANTS
274 County Rd., Tenafly, NJ 07670
201 567-8800
Syndicated radio programming service.

BONNEVILLE PRODUCTIONS ★
130 Social Hall Ave., Salt Lake City, UT 84111
801 237-2400
Audio line, dist. amps.

BONNEVILLE SATELLITE CORP. ★
165 Social Hall Ave., Salt Lake City, UT 84111
801 237-2450
Syndicated radio programming.

BOONTON ELECTRONICS CORP. ★
499 Pomeroy Rd., Box 122, Parsippany, NJ 07054
201 887-5110
Modulation monitors; RF power meters, wattmeters, voltmeters; RF signal generators; impedence bridges.

BOSCH ★
2300 S. 2300 West, Salt Lake City, UT 84119
801 972-8000
Studio, field, ENG, single-piece cameras; one-inch B VTRs; video cart automation systems. Solid state telecines, optical multiplexers, color correctors. Character generators, digital still stores. Serial interface routing switchers. Multisource editing systems. Color bar, SID generators. NTSC encoders. Audio editing systems, preamps, monitor amps, DAs.
SEE AD PG. 193

BPI (BROADCAST PROGRAMMING INTERNAT'L) ★
Box 547, Bellingham, WA 98227
800 426-9082
Syndicated radio programming.
SEE AD PG. 143

BRAND-REX CO. ★
Box 498, Willimantic, CT 06226
203 423-7771
Solid core, foam dielectric, fiberoptic transmission cable; video, audio, lighting/ac cable & connectors.

BRITISH VIDEOTEX AND TELETEXT/ LOGICA ★
666 Third Ave., New York, NY 10017
212 599-0828
Teletext hardware & software.

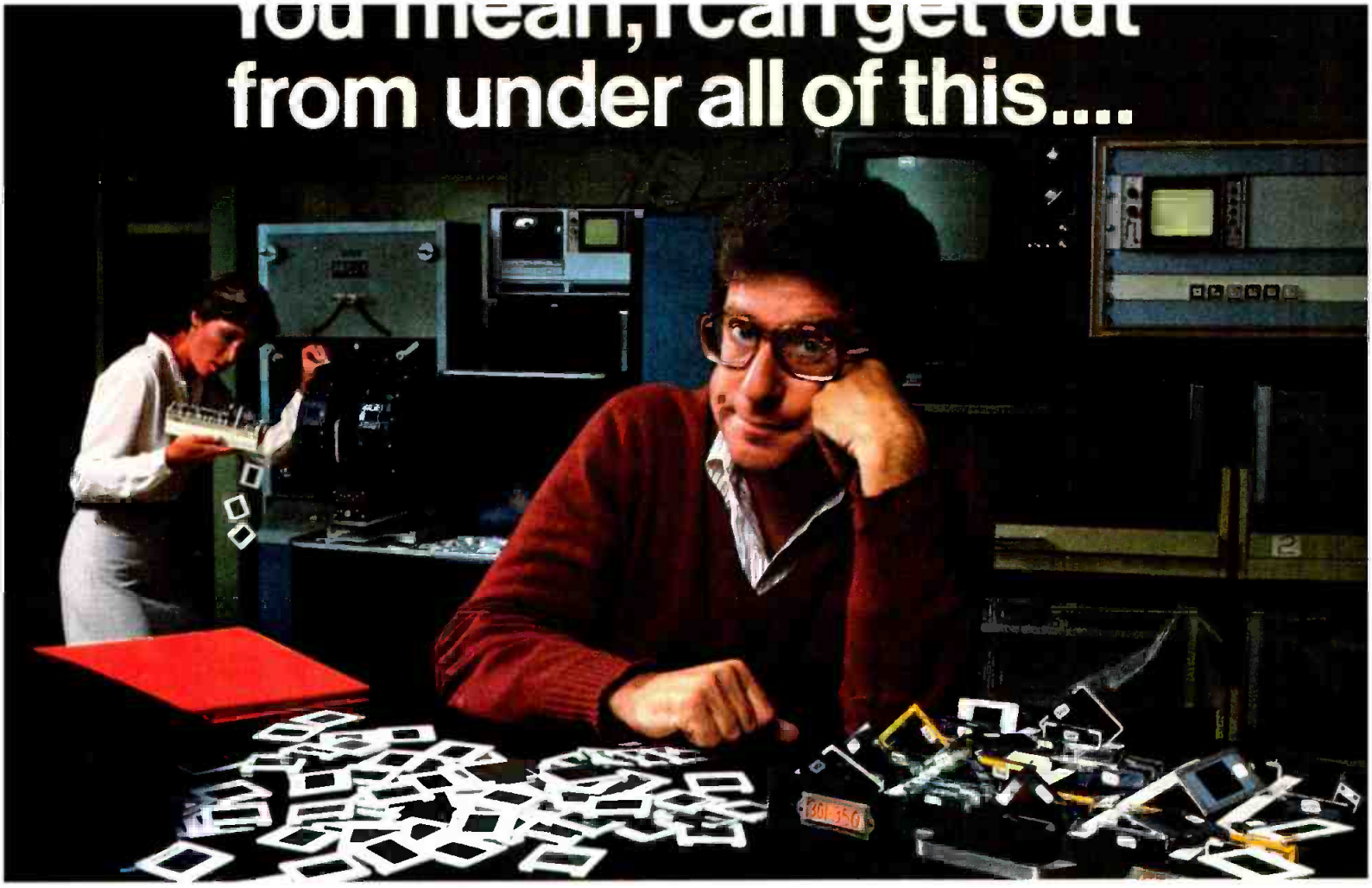
BROADCAST AIDS, INC. ★
20 Red Rose Drive, Levittown, PA 19056
215 547-7133
Digital clocks, timers.

BROADCAST AUDIO CORP. ★
11306 Sunco Drive, Rancho Cordova, CA 95670
916 635-1048
Mono & stereo audio studio consoles; TV audio consoles; monitor/power amps, audio DAs.

BROADCAST CARTRIDGE SERVICE, INC. ★
15131 Triton Lane, Ste. 108, Huntington Beach, CA 92649
714 898-7224
Loaded audio carts, empty carts, cart reconditioning service; phase meters.

www.americanradiohistory.com

You mean, I can get out from under all of this....



for under $60K? With effects?

Problems, problems, problems. The television business can surely be that way. We know, because Harris has been serving the broadcast industry for sixty years. That's why we built IRIS II. To solve some of your most pressing problems now, plus give you the long-term benefits of the world's most advanced electronic still store and digital imaging system.

Lost slides, dirty slides, slides with finger prints? Slide hassles are over! With IRIS II you can instantly access up to 23,000 on-line stills. An off-line library of over 80,000 stills is also available.

Is everyone standing in line for slides? With IRIS II, no more! Production, engineering, art, promotion, and news can all access stills simultaneously. Not that big yet? Buy IRIS II with one user-station and expand it to two or more when you're ready.

Make your stills come alive! Ever wanted to key live video onto a montage of still images? IRIS II is the answer! Create an almost endless variety of digital effects with IRIS II's exclusive DIGIKEY and Compressor/Positioner. Key in an external source for even more visual excitement, or create your own still from live video.

Ever wished your still store had wheels? A small, lightweight data cartridge for van or studio makes the IRIS II just about perfect for mobile applications. Now you can build your stills at the studio, toss the data cartridge into your briefcase and head for the field.

How can you be sure of state-of-the-art technology and digital standards compatibility? IRIS II is a component-coded system, so it won't become obsolete tomorrow. You're not locked into the composite system of yesterday.

IRIS II. The most elegant, and now the most flexible, digital still store and imaging system. Truly, the best solution.

For more information about this solution, and others we're famous for, call us at (408) 737-2100. Or, write HARRIS VIDEO SYSTEMS, 1255 East Arques Avenue, Sunnyvale, CA 94086.

HARRIS

Circle 138 on Reader Service Card

www.americanradiohistory.com

BROADCAST ELECTRONICS, INC. ★
4100 N. 24 St., Quincy, IL 62305
217 224-9600
Mono and stereo audio studio consoles; single, dual, multi, time delay cart player/recorders; tape loaders, rewinders; turntables; pickup arms, phono preamps; complete program automation systems; AM & FM compressor/limiters; telco interface equipment; preamps, line & monitor amps; audio DAs. FM transmitters, exciters, RF amps; FM SCA equipment.

BROADCAST MICROWAVE SERVICES, INC. ★
7320 Convoy Court, San Diego, CA 92111
714 560-8601
Intercity, ENG & airborne microwave & central receivers; STLs, microwave antennas; towers & masts.
See ad pg. 15, 140
Field Office:
NY Convergence, 250 W. 57 St., #815, New York 10019.....212 765-1333
Refer to Reps/Distributors section

BROADCAST MUSIC, INC. (BMI)
320 W. 57 St., New York, NY 10019
212 586-2000
Syndicated radio programming service.

BROADCAST SYSTEMS, INC. ★
8222 Jamestown Dr., Austin, TX 78758
512 836-6011
Equipment rental service.

BROADCAST TECHNIQUES ★
316 E. El Camino Dr., Phoenix, AZ 85020
602 995-1666
Engineering consultant.
SEE AD PAGE 146

BROADCAST TECHNOLOGY CONSULTANTS ★
6700 Squibb Rd. Suite 104, Mission, KS 66202
913 677-1983
Engineering, facilities design consulting.

BROADCAST TECHNOLOGY, INC. ★
33 Comac Loop, Ronkonkoma, NY 11779
516 588-6565
Mono, stereo, audio for TV studio consoles; mic mixers, portable mixers; graphic equalizers; digital and analog reverb/effects systems; audio delay lines. Headphones. Audio preamps, monitor & line amps, DAs, power amps; VU, PPM, LED level indicators. Serial & parallel interface routing switchers.

BROADCAST VIDEO SYSTEMS, LTD. ★
1050 McNicoll Ave., Unit 15, Agincourt, Ont. M1W 2L8 Canada
416 497-1020
Dist. of Cox SEGs; RGB & encoded chroma-keyers; title & downstream keyers; safe title area generator; NTSC encoders, decoders, comb filter decoders; delay lines & filters; color correctors; proc amps; passive video switchers. Mfgr. of automatic VITS analyzer, blanking width meter. Dist. of Electronic Visuals waveform monitors, vectorscopes, combination scopes. Hum bucking coils.

BRUEL & KJAER INSTRUMENTS, INC. ★
185 Forest St., Marlborough, MA 01752
617 481-7000
Electret/condenser microphones. Audio signal generators, harmonic distortion meters, IM meters, spectrum analyzers, wow & flutter meters, time delay spectrometry.

BRYSTON MFG., LTD. ★
57 Westmore Dr., Rexdale, Ont. M90 3Y6 Canada
416 746-1800
Audio preamps, monitor/line amps.

BSM SYSTEMS ★
Box 8081, Spokane, WA 99203
509 448-0697
Portable & studio audio consoles; audio DAs; audio routing switchers.
SEE AD PG. 206

THE BTX CORP. ★
12 Huron Dr., Natick, MA 01760
617 653-6811
SMPTE time code generator/readers, time code synchronizers, audio/video interfaces.

BUHL OPTICAL
1009 Beech Ave., Pittsburgh, PA 15233
412 321-0076
35mm telecine slide projectors, optical multiplexers.

BULLET RECORDING ★
49 Music Square W., Nashville, TN 37203
615 327-4621
Teleproduction & post-production facilities.

★ MEANS IT'S VERIFIED

THE BURBANK STUDIOS ★
4000 Warner Blvd., Burbank, CA 91522
213 954-6000
Teleproduction facility.

RICHARD W. BURDEN ASSOC.
20944 Sherman Way, Canoga Park, CA 91303
213 340-4590
Mfgr. of audio test signal generators. Dist. of full line of audio equipment. Engineering, facility design consulting.

BUSH & MILLIMAKI SERVICES, INC. ★
902 Bob Wallace Ave., Huntsville, AL 35801
205 533-9274
Tripods & heads. Lens repair service.

B-W LIGHTING SYSTEMS ★
Box 45162, Tulsa, OK 74145
918 664-1111
Full line of lighting equipment including lamps, HMI, CSI & quartz fixtures, stands & rigging, lighting control boards & dimmer packs, cyc lighting; cyc track & curtains. Transportation cases. Studio furniture, equipment racks. Lighting cable, connectors, jackfields. Engineering consulting, set design services.

CABLEWAVE SYSTEMS, INC.
60 Dodge Ave., North Haven, CT 06473
203 239-3311
Intercity microwave links, microwave & waveguide STLs; microwave antennas; foam dielectric transmission line, connectors; carrier current systems.

AUDITRONICS AUTHORIZED DEALERS

Allied Broadcast Equipment
635 South E Street
Richmond, IN 47374-8487
(317) 962-8596

Audio Broadcast Group, Inc.
2342 S. Division Avenue
Grand Rapids, MI 49507
(616) 452-1596

Broadcast Services Co.
Rt. 3, Box 45-E
Four Oaks, NC 27524
(919) 934-6869

Doug Brown Enterprises
1703 East Skelly Drive
Tulsa, OK 74105
(918) 747-3618

Control Technology, Inc.
2322 Davie Blvd.
Ft. Lauderdale, FL 33312
(305) 587-2716

Phase Audio, Inc.
151 N. Angelus
Memphis, TN 38104
(901) 726-1900

Pro Audio General Store
1378 N.W. 100th Ave.
Coral Springs, FL 33065
(305) 752-0330

Robert Slye Electronics
3415 N. Washington Blvd.
Arlington, VA 22201
(703) 525-7272

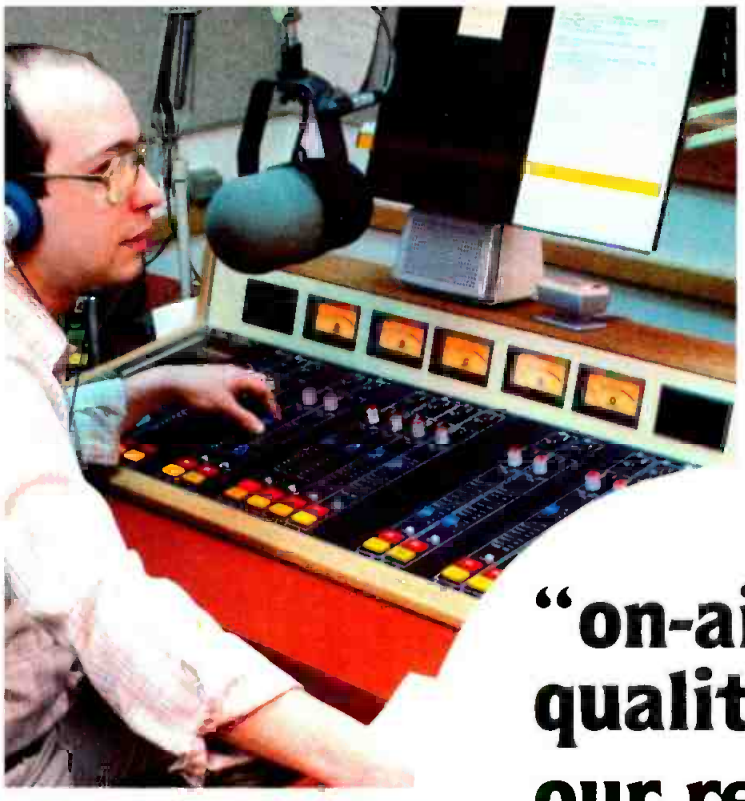
Sonics Associates, Inc.
237 Oxmoor Cl. Suite 101
Birmingham, AL 35209
(205) 942-9631

Sound Genesis
2001 Bryant Street
San Francisco, CA 94110
(415) 285-8900

Westec Audio Video, Inc.
1841 Broadway, Suite 1203
New York, NY 10023
(212) 586-1662

auditronics. inc.
3750 Old Getwell Rd.
Memphis, TN 38118 USA
Tel: (901) 362-1350
Telex: 533356

www.americanradiohistory.com



"on-air quality . . . our reason for buying Auditronics,"

Bob Taylor, General Manager of Wilmington's WDEL-AM and WSTW-FM says, "We've had Auditronics 200 Series consoles on-line for over six months and our sound's superiority is reflected in listener response. The psychological effect on our own on-air people was immediate and positive. They find the Auditronics boards comfortable to work with, whether it's the 212 in the news booth, the 218s in the production rooms or the 224 in AM master control.

"Best of all, when it came to price, Auditronics was affordable. I don't mean the cheapest; I mean cost/efficient. For a few extra dollars, we have future expansion capability and the customizing that we needed. To us, that's what affordable really means."

For complete product information and a report on why WDEL's Bob Taylor chose four Auditronics 200 Series consoles for his new facilities, contact:

auditronics, inc.

3750 Old Getwell Road
Memphis, Tennessee 38118 USA
(901) 362-1350 TELEX: 533356

Circle 147 on Reader Service Card

www.americanradiohistory.com

CADO SYSTEMS CORP. ★
2771 Toledo St. Torrance, CA 90503
213 320-9660
Radio business automation hardware & software; music format control.

CALICO VIDEO CO., INC. ★
8955 Thornton Rd., Stockton, CA 95209
209 952-3333
Video carts for TCR-100, cart rebuilding.

CALIFORNIA INSTRUMENTS
5150 Convoy St., San Diego, CA 92111
714 279-8620
AC power generators, converters, inverters.

CALIFORNIA MICROWAVE, INC. ★
990 Almanor Ave., Sunnyvale, CA 94086
408 732-4000
Transmit/receive, receive only, transportable satellite earth stations; PTV scramblers; facility turnkey installation, engineering consulting, satellite earth station site selection services.

CALIFORNIA VIDEO STUDIOS ★
1041 N. Orange Dr., Hollywood, CA 90038
213 464-4266
Studio & mobile teleproduction facilities.

CALREC AUDIO, LTD. ★
(Dist. by Audio + Design)
Box 786, Bremerton, WA 98310
800 426-6170
Capsular, electret/condenser, sound field mics; audio preamps.

CALVERT ELECTRONICS, INC. ★
1 Branca Rd., E. Rutherford, NJ 07073
800 526-6362
Camera pickup tubes. Tripods, heads, pedestals, ENG braces, dollies. Vacuum tubes; RF inductors, gaskets, transformers, rectifiers, surge protectors, quartz crystals, solid state components.
SEE AD PG. 152
Field Office:
CA 1355 Redondo Ave.,
Long Beach 90804 ..... 800 421-7549

CALZONE CASE CO. ★
Box 862, S. Norwolk, CT 06856
203 853-7907
Foam insert & rack configuration transportation cases. Studio furniture, tape storage units, equipment racks.
SEE AD PG. 14
Refer to Reps/Distributors section

CAMBRIDGE PRODUCTS CORP.
244 Woodland Ave., Bloomfield, CT 06002
203 243-1761
Cable connectors.

THE CAMERA MART, INC. ★
456 W. 55 St., New York, NY 10019
212 757-6977
Equipment rental service. East coast dist. of EC-35. Dist. of Ronford tripods, heads, legs.
SEE AD PG. 104-105

CAMRAC STUDIOS ★
1775 Kuenzli St., Box 9298, Reno, NV 89507
702 323-0965
Video production & post-production facility.

CANDEX PACIFIC, INC. ★
693 Veterans Blvd., Redwood City, CA 94404
415 364-8427
Engineering consultant.

CANFORD AUDIO (NA), INC. ★
652 Glenbrook Rd., Stamford, CT 06906
203 324-2889
Audio, ac cable; connectors.

CANON USA, INC. ★
1 Canon Plaza, Lake Success, NY 11042
516 488-6700
TV & cine camera lenses, lens accessories.
SEE AD PG. 21, 155

CANTER-REDMAN TECHNOLOGIES CORP. ★
321 W. 44 St., New York, NY 10036
212 245-5505
Video test signal generators; waveform monitors; "test center." Black burst, color bar, multiburst, staircase ramp signal generators; NTSC, comb filter decoders. Video proc amps, DAs. RGB monitors, video projectors.

★ MEANS IT'S VERIFIED

CAPITOL MAGNETIC PRODUCTS ★
6902 Sunset Blvd., Hollywood, CA 90028
213 461-2701
Audio carts, bulk tapes; master disk recording blanks.
SEE AD PG. 26

CARLETON PRODUCTIONS ★
1500 Merivale Rd., Ottawa, Ont. K2C 3G6
Canada
613 224-1313
Studio & mobile teleproduction facility; video post-production facility.

CAROB VIDEO ★
250 W. 57 St., New York, NY 10019
212 957-9525
Video post-production facility.

CASES, INC.
1745 W. 134 St., Gordeno, CA 90249
213 770-4444
Foam insert & rack configuration transportation cases, equipment racks.

CAT SYSTEMS, INC. ★
401 E. 74 St., New York, NY 10021
212 988-0290
Computerized automation for telesystems, remote control systems. Facility turnkey installations, engineering & computer consultants.

CATALYST PRODUCTION SERVICES ★
1782 University Ave., Berkeley, CA 94703
415 848-7606
Studio & mobile teleproduction facilities; video post-production facility.

CATEL, DIV. UNITED SCIENTIFIC CORP. ★
4800 Patrick Henry, Santa Clara, CA 95054
408 988-7722
RF amplifiers, converters, stereo generators, modulators.

CAVOX-TAPEATHON CORP.
502 S. Isis Ave., Inglewood, CA 90301
800 421-1029
Relay & time insertion automation sequencers; complete automation systems; auto time/weather announcers; tape duplicating services; portable & studio open-reel tape player/recorders; syndicated radio programming services.

CBS TECHNOLOGY CENTER ★
227 High Ridge Rd., Stamford, CT 06905
203 327-2000
Audio test records.

C.C.R. POST, INC. ★
135 E. 55 St., New York, NY 10022
212 753-9230
Mobile teleproduction facility; video post-production facility.

CECO COMMUNICATIONS, INC. ★
2115 Ave. X, Brooklyn, NY 11235
800 221-0860
Single-tube & b&w video cameras; solid state cameras; lenses & pickup tubes; videotape, empty reels; mono, NTSC, RGB & dc portable video monitors; video projectors; video DAs. RF power tubes. Vacuum tubes, solid state components, rectifiers, connectors.
SEE AD PG. 210

CEI, A PANAVISON CO. ★
880 Maude Ave., Mountain View, CA 94043
415 969-1910
Field, electronic cinematography & ENG/EFP cameras, lenses; telecine cameras.

CELESTIAL MECHANIX
612 Hampton Dr., Venice, CA 90291
213 392-8771
Video production & special effects.

CENTER CITY VIDEO, INC. ★
1503 Walnut St., Philadelphia, PA 19102
215 568-4134
Studio & mobile teleproduction facilities; video post-production facility.

CENTER VIDEO CENTER, INC. ★
5565 N. Elston Ave., Chicogo, IL 60630
800 621-4354
Editing, production consoles. Equipment rental service; video post-production facility; studio, set design.

CENTRAL DYNAMICS CORP. ★
900 Corporate Dr., Mahwoh, NJ 07430
201 529-1550
AMERICAN DATA: Portable, large & compact production switchers; post-production switchers; colorizers, RGB chromakeyers, title & downstream keyers; manual master control switchers; parallel & serial interface routing switchers; black burst generators; pulse amps, video DAs.
CENTRAL DYNAMICS: Large, compact/mobile & automated video production switchers, post-production switchers; standalone effects generators, RGB & encoded chromakeyers, title & downstream keyers; manual, automated & business automation interfaced master control switchers; video signal & cable equalizers; video pulse amps, DAs & sc amps. Audio preamps, line, monitor & power amps, audio DAs, amp power supplies.
PHILIPS BROADCAST GROUP: Studio, field & ENG/EFP camera; one-inch C VTRs. Digital

www.americanradiohistory.com

SMALL WONDER

The MICROTIME S-130 Full Frame Synchronizer

Versatility, simplicity and reliability in one compact chassis. The result of packaging innovation and design excellence. The S-130. Only from Microtime.

- Full Frame storage processes VITS, VIRS, and teletext information
- Selectable auto freeze or auto black with loss of input signal
- Manual selection of Field 1, Field 2, or Full Frame Freeze
- Independent adjustment of horizontal and burst output phase, with respect to black burst reference signal
- Automatic color/mono detection and switching
- Differential video input for common mode hum rejection
- Light weight, small size, and low power consumption make the S-130 ideal for mobile or ENG use

A microprocessor testing subroutine initiated by internal switch selection provides self-testing capability for ease of maintenance and confidence testing.

For full information, contact:
MICROTIME, INC.
1280 Blue Hills Avenue
Bloomfield, CT 06002
Tel. (203) 242-4242.
TWX 710-425-1165

MICROTIME

Circle 148 on Reader Service Card

Visit our SMPTE Booth No. 223-224

www.americanradiohistory.com

TBCs, noise reducers. NTSC monitors. UHF, VHF TV transmitters, TV exciters. Facility turnkey installations, mobile vehicle construction.

CENTRO CORP. ★
9516 Chesapeake Dr., San Diego, CA 92123
714 560-1578
Mobile van construction; facility turnkey installation; TV studio design.

CENTURY PRECISION CINE/OPTICS
10661 Burbank Blvd., N. Hollywood, CA 91601
213 766-3715
Cine & video camera lenses; motion picture accessories; cine & video adapters & special modifications.

CENTURY III TELEPRODUCTIONS, INC. ★
651 Beacon St., Boston, MA 02115
617 267-6400
Video production & post-production facilities.

CENTURY 21 PROGRAMMING, INC. ★
4340 Beltwood Pky., Dallas, TX 75234
800 527-5959
Syndicated radio programming services.

★ MEANS IT'S VERIFIED

CETEC ANTENNAS ★
Box 28425, 6939 Power Inn Rd., Sacramento, CA 95828
916 383-1177
FM, TV (HP & CP) antennas. RF filters, power dividers, diplexers.

CETEC BROADCAST GROUP ★
1110 Mark Ave., Carpinteria, CA 93013
805 684-7686
Portable, mono & stereo studio & audio for TV mixing consoles; turntables & pickup arms; complete program automation systems; time insertion sequencers, computer controllers, auto time/weather announcers, audio business automation hardware.

CETEC GAUSS
9130 Glenoaks Blvd., Sun Valley, CA 91352
213 875-1900
High-speed audio tape duplicators, audio monitors.

CETEC VEGA ★
9900 Baldwin Pl., El Monte, CA 91731
213 442-0782
RF intercoms; RF mics; tone encoders & decoders.
SEE AD PG. 191
Refer to Reps/Distributors section

CEZAR INTERNATIONAL, LTD. ★
1026 West Maude Ave., Sunnyvale, CA 94086
408 738-3900
Audio/video synchronizers; two-VTR editor/controllers; SMPTE time code readers & generators.

CFI VIDEO ★
959 Seward St., Hollywood, CA 90038
213 462-3161
Video post-production facility.

CHANNELMATIC, INC.
821 Tavern Rd., Alpine, CA 92001
714 445-2691
Relay & time insertion automation sequencers, computer controllers; audio DAs. Video cart, cassette automation systems; video DAs. Remote control systems. Digital clocks, clock-controllers.

CHANNEL ONE VIDEO TAPE, INC. ★
3341 NW 82 Ave., Miami, FL 33122
305 592-1764
Studio & mobile teleproduction facilities; video post-production facility.

CHASE MEDIA, INC.
5284 S. 320 West, Ste. C-266, Salt Lake City, UT 84107
801 261-1383
Business automation systems.

CHICAGO VIDEO, INC. ★
12 W. College Dr., Arlington Hts., IL 60004
800 323-6344
Studio & mobile teleproduction facilities; video post-production facility.

JOHN CHILES, INC. ★
7622 Main St., Jacksonville, FL 32208
904 764-5281
Nicad batteries, chargers.

CHRIS CRAFT VIDEO TAPE CENTER ★
915 N. La Brea, Hollywood, CA 90038
213 851-1000 ext. 247
Video production & post-production facility.

CHRISTIE ELECTRIC CORP. ★
20665 Manhattan Pl., Torrance, CA 90501
213 320-0808
Nicad batteries, chargers.

CHRONICLE PRODUCTIONS ★
1001 Van Ness Ave., San Francisco, CA 94109
415 561-8663
Studio & mobile teleproduction facilities; video post-production facility.

CHRONO-LOG CORP. ★
2 W. Park Rd., Havertown, PA 19083
215 853-1130
Digital clocks, master & slave clocks, timers, time distribution.

CHYRON CORP. ★
265 Spagnoli Rd., Melville, NY 11747
516 249-3296
Character generators, character generator/framestores, digital art/paint systems, bit pad digitizers, weather symbol inserters, "draw-on-screen" systems.

CINEMA PRODUCTS CORP. ★
2037 Granville Ave., Los Angeles, CA 90025
213 478-0711
ENG/EFP cameras, cine cameras, lenses; digital camera control unit. Tripods, heads, camera stabilizing system; lamps, HMI & quartz fixtures; nicad batteries, chargers; ENG/EFP portable teleprompters. Video camera service.

CINEMA VIDEO CENTER ★
211 E. Grand, Chicago, IL 60611
312 527-4050
Teleproduction facility.

CINE 60, INC. ★
630 Ninth Ave., New York, NY 10036
212 586-8782
Nicad power supplies, chargers; portable lighting units, ENG braces.
SEE AD PG. 98

CINETAPE ★
801 N. La Brea, Hollywood, CA 90038
213 934-8836
Teleproduction & post-production facilities.

CINETRONICS, INC. ★
304 S. Broadway, Ste. 510, Los Angeles, CA 90013
213 617-0976
Teleproduction & post-production facilities.

CIRCUIT DEVELOPMENT CO., INC. ★
1029 Utica Ave. Brooklyn, NY 11203
212 346-1212
3-channel RF monitors; two-way communications systems including base station/repeater & cassette recorder interface; headphone monitor amp.

CLARCOMPUTER SERVICES
Box 100, 111 S. Fifth St., Vandalia, IL 62471
618 283-2325
Radio business automation software.

CLARION PRODUCTION SERVICES, INC. ★
8 S. Michigan, Ste. 3700, Chicago, IL 60603
312 781-0080
Mobile teleproduction facilities.

DAVID CLARK CO.
360 Franklin St., Worcester, MA 01604
617 756-6216
Headphones, intercom systems.

CLEAR-COM INTERCOM SYSTEMS ★
1111 17 St., San Francisco, CA 94107
415 861-6666
Headphones, hardwired intercoms.
SEE AD PG. 111

CMC TECHNOLOGY CORP. ★
733 N. Pastoria Ave., Sunnyvale, CA 94086
408 245-3342
Replacement & rebuilt heads for quad and one-inch VTRs; VTR rebuilding service.

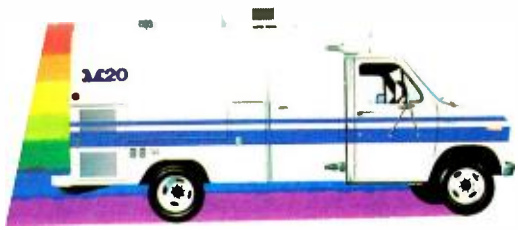
CMX SYSTEMS, AN ORROX CORP. ★
3303 Scott Blvd., Santa Clara, CA 95014
408 988-2000
Video editor/controllers, multisource editors.
SEE AD PG. 36
Refer to Reps/Distributors section

COASTCOM ★
2312 Stanwell Dr., Concord, CA 94520
415 825-7500
Video filters. Diplexers; transmit/receive satellite earth stations; remote control systems; RF program subcarrier.

COAXIAL DYNAMICS, INC. ★
13110 Enterprise Ave., Cleveland, OH 44135
216 267-2233
RF filters, loads, switches, power dividers. RF power meters, wattmeters; frequency monitors, controllers.

www.americanradiohistory.com

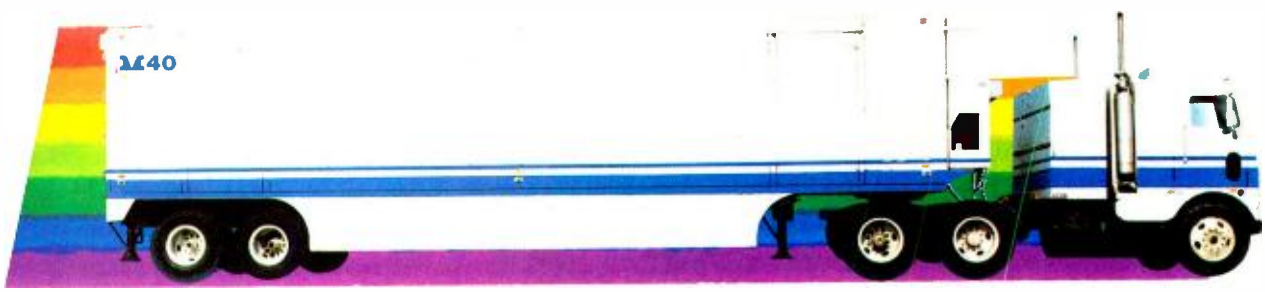
Midwest can deliver the mobile unit you need... FAST!



Whether you're covering on-the-spot news or providing network coverage of a tie-breaking football game, Midwest can put you in the action ... fast! ... with the mobile production unit precisely suited to the job. Midwest's totally integrated mobile production systems give you the quality you need, plus the comfort and convenience that make the tough assignments easier.

One of the largest and most experienced video equipment suppliers in the nation, Midwest offers a complete line of mobile units ... from ENG trucks to 45-foot semi's. And Midwest acts as your single source supplier for all the equipment you could ever need.

For full information on how fast Midwest can put you in action with the mobile unit you need, call toll-free today:



800-543-1584
(In Kentucky 606-331-8990)

Circle 149 on Reader Service Card

MIDWEST CORPORATION
Mobile Unit Group
One Sperti Drive
Edgewood, KY 41017

Cincinnati, OH 606-331-8990
Columbus, OH 614-476-2800
Cleveland, OH 216-447-9745
Detroit, MI 313-689-9730
Indianapolis, IN 317-251-5750
Louisville, KY 502-491-2888
Lexington, KY 606-277-4994
Nashville, TN 615-331-5791
Charleston, WV 304-722-2921
Virginia Beach, VA 804-464-6256
Washington, DC 301-577-4903
Charlotte, NC 704-399-6336
Miami, FL 305-592-5355

www.americanradiohistory.com

COHERENT COMMUNICATIONS, INC. ★
13756 Glenoaks Blvd., Sylmar, CA 91342
213 362-2566
Mic mixers, portable audio consoles; RF intercoms; electret/condenser, RF & lavalier mics.

COHU INC., ELECTRONICS DIV. ★
Box 85623, San Diego, CA 92138
714 277-6700
Telecine multiplexers, automatic light controls & complete telecine systems; monochrome monitors; pulse. equalizing amps, DAs; NTSC encoders; sync generators.

COLORADO VIDEO, INC. ★
Box 598, Boulder, CO 80306
303 444-3972
Digital still stores; colorizers; slow scan transmitters & receivers.

COLOR FILM CORP., VIDEO DIV.
98 Commerce Rd. Stamford, CT 06904
203 327-7270
Video post-production facility; video duplication services.

COLORGRAPHICS WEATHER SYSTEMS, INC.
5727 Tokay Blvd., Madison, WI 53719
608 274-5786
Digital art/paint systems, weather symbol inserters; weather radar systems. weather information services.

COLORTRAN, INC. ★
1015 Chestnut St., Burbank, CA 91506
213 843-1200
Lamps, quartz fixtures, stands & rigging, lighting control boards, dimmer packs, diffusion & efx material, cyc lighting; nicad batteries, chargers.

★ MEANS IT'S VERIFIED

COLUMBIA VIDEO SYSTEMS ★
The Columbia Building, 1741 Second St., Highland Park, IL 60035
312 433-6010
Equipment rental service; recording studio; video post-production facility; stage, studio rentals; facility turnkey installation; studio, set design.

COLUMBINE SYSTEMS, INC. ★
7 Jackson Bldg., Level 3, Plaza of the Presidents, Golden, CO 80401
303 279-4000
Complete radio program automation systems; radio business automation software.

COMAD, INC. ★
Box 10667, Pensacola, FL 32504
904 434-9782
Portable production switchers; video DAs; jackfields, patch panels.

COMARK, INC. ★
Rt. 57 & Hudson Dr., Southwick, MA 01077
413 569-5939
UHF TV transmitters; RF amps, TV exciters; RF attenuators, converters, filters, switches; power dividers; diplexers; modulators; remote control systems; FM antennas; RF demodulators; facility turnkey installations; engineering consultant.

COMEX SYSTEMS ★
2 Columbia Dr., Amherst, NH 03031
603 889-8564
Digital audio delay.
SEE AD PG. 136

COMMERCE AIRBORNE, DIV. IFR AVIONICS
16425 Hart St., Ste. 106, Van Nuys, CA 91406
213 782-4801
Aircraft & airborn microwave systems; audio DAs; engineering consultant.

COMPACT VIDEO SERVICES, INC. ★
2813 W. Alameda Ave., Burbank, CA 91505
213 840-7000
Studio & mobile teleproduction facilities; video post-production facility.

COMPREHENSIVE VIDEO SUPPLY CORP. ★
148 Veterans Dr., Northvale, NJ 07647
201 767-7990
Mfgr. of mic mixers, character generators, video signal test device, lighting units; distributor of full line of audio & video products.
SEE AD PG. 86

COMPUCON, INC. ★
Box 401229, Dallas, TX 75240
214 233-4380
Engineering consultant; earth station site selection.

COMPUTER BUSINESS SYSTEMS
167 Moore Rd., Weymouth, MA 02189
617 337-7799
Business automation hardware.

COMPUTER CONCEPTS CORP. ★
8001 W. 63 St., Shawnee Mission, KS 66202
800 255-6350
Complete program automation systems, radio business automation hardware, radio newsroom computers.

COMPUTER GRAPHICS LAB, INC. ★
405 Lexington Ave., New York, NY 10174
212 557-5130
Digital art/paint systems, camera/VTR digitizers.

COMPUTER IMAGE CORP.
2475 W. 2 Ave. Ste. 4, Denver, CO 80223
303 934-5801
Electronic animation.

COMPUTER LABS, DIV. ANALOG DEVICES, INC.
505 Edwardia Dr., Greensboro, NC 27409
919 292-6427
Video A/D & D/A converters.

COMPUTER MANAGEMENT SYSTEMS, INC.
6610 N. Shadeland Ave., Indianapolis, IN 46220
317 842-1830
Radio business computer & music rotation systems.

COMPUTER OPERATIONS, INC.
5001-J Forbes Blvd., Lanham, MD 20706
301 459-2100
Real-time video animation.

COMPUTER VIDEO SYSTEMS, INC.
3678 W. 2150 South, Unit 2, Salt Lake City, UT 84120
801 974-5380
Character generators.

COMREX CORP. ★
Box 269, 60 Union Ave., Sudbury, MA 01776
617 443-8811
Portable audio consoles; ALC, AGC amps; RF intercoms; telco interface equipment; remote pickup equipment.
SEE AD PG. 145

COMSEARCH, INC. ★
11503 Sunrise Valley Dr., Reston, VA 22091
703 620-6300
Engineering consultant; earth station site selection; cellular radio.

COMTECH DATA CORP.
350 N. Hayden Rd., Scottsdale, AZ 85257
602 949-1155
Transmit/receive, receive only. transportable satellite earth stations.

CONCEPT PRODUCTIONS ★
1224 Coloma Way, Roseville, CA 95678
916 782-7754
Syndicated radio programming.

CONEX ELECTRO SYSTEMS, INC.
1602 Carolina St., Box 1342, Bellingham, WA 98226
206 734-4323
Complete radio program automation systems; audio switchers; audio monitor, power amps.

CONIFER CORP. ★
1000 N. Roosevelt, Burlington, IA 52601
319 752-3607
STV & MDS antennas & down converters; TVRO equipment.

OTIS CONNER PRODUCTIONS
2829 W. Northwest Hwy., Ste. 940, Dallas, TX 75220
214 358-5500
Music library; TV & radio musical ID production packages.

CONRAC, DIV. CONRAC CORP. ★
600 N. Rimsdale Ave., Covina, CA 91722
213 966-3511
Monochrome, NTSC, RGB video monitors; graphics display monitors.
SEE AD PG. 57
Refer to Reps/Distributors section

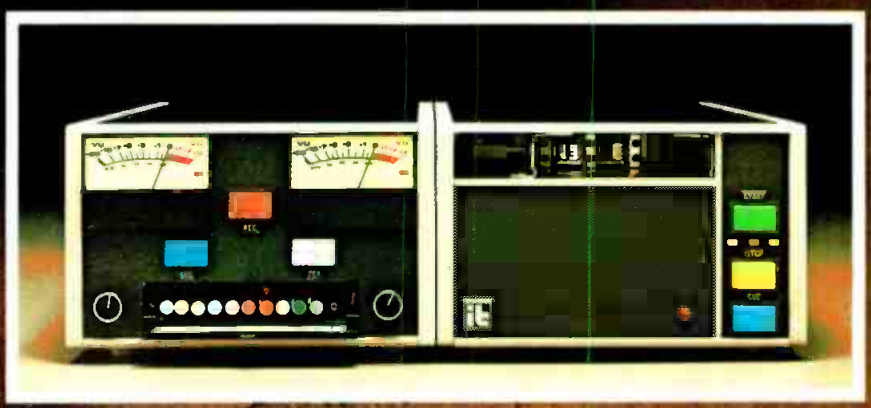
CONTINENTAL COLOUR RECORDING, INC. ★
135 E. 55 St., New York, NY 10022
212 753-7341
Mobile teleproduction facility; video post-production facility.

CONTINENTAL ELECTRONIC (CONTEL)
1620 W. 32 Pl., Hialeah, FL 33012
305 822-1421
Cart player/recorders; LPTV transmitters.

www.americanradiohistory.com

Better listening through better design—Series 99B

...Crisp, Clean, Brilliant Sound



Superior features!

"ELSA" (Patent 4,142,221) the only Cartridge Preparation System that automatically erases the cartridge, eliminates azimuth error and locates the splice. "ELSA" combines with:

- Crystal-referenced DC Brushless Servo Motor
- Standard High-Speed Cue
- Micro-adjust, center pivot head module
- Exclusive ITC open-face head design (Patent 4,193,103)
- Exceptional Frequency Response
- Improved headroom, transient response and square wave performance
- Distortion-free cartridge positioning system
- Multi-turn Calibration Controls
- Multi-function Test-Tone Generator
- Dramatically reduced heat allows for sealed case
- Microprocessor controlled

Series 99B—a combination of performance features that meets even the highest standards.

International Tapetronics Corporation

2425 South Main Street, P.O. Box 241, Bloomington, Illinois 61701

Call Toll-Free 800-447-0414 to learn more about Series 99B and to receive our new, complete brochure. Call Collect from Alaska, Hawaii or Illinois (309) 828-1381.

Circle 150 on Reader Service Card

www.americanradiohistory.com

Prime Time

For information on the products or services mentioned here, contact your RCA Representative. Or write RCA, Prime Time, Bldg. 2-2A, Camden, NJ 08102.

Selecting The Right FM Antenna

RCA's family of circularly polarized antennas—FM and VHF—gives you a wider margin of choice in selecting the antenna to transmit your signal with top-notch efficiency.

"BF" Series ring antennas can be pole or side-mounted to suit your application—and protection from the effects of icing can be assured by choosing an antenna with radomes or high efficiency deicers. This product selection, together with our Pattern Optimization service, can be used to tailor a system to very exacting requirements.

In addition to the ring series of FM antennas, RCA offers the BFJ Series panel antenna which is built to mount around the supporting tower. This patented antenna features low windloading and uses half the number of feedlines used by our competitors.

If your FM operation is moving upscale, or you'd like to, check with your RCA Representative. Or call our toll-free number: 800-257-7952.

New HOT LINE for Aural Broadcast Systems

RCA Aural Broadcast Systems is a prime source for AM/FM Antennas and Transmitters as well as offering a diverse range of audio products. For product availability, pricing and application data, see your RCA representative or call "toll-free":

800-257-7952

WOR-TV TK-47's Save Time, Air Picture-Perfect N.Y. Mets Games Across USA

Channel 9 covers home plate action from one of their six TK-47 automatic color cameras. In the distance, the Met's Diamond Vision replays game action in slow motion from another TK-47 output.

WOR-TV is no ordinary independent VHF station. It's one of the few superstations in the U.S. Of the 81 Mets home games per season, most are carried via satellite to baseball fans in nearly every major U.S. city. "Fundamental to the quality of service we provide viewers . . . and essential to production efficiency are our six TK-47 Automatic Color Cameras installed at Shea Stadium (the Mets' home field)", reports Dick Quodomine, WOR's Chief Engineer.

In their third season of operation, WOR's 47's have proved the advantages of their extensive automatic capabilities. Explains Quodomine, "With our previous cameras, we needed the assistance of each cameraman to set-up our cameras before every telecast . . . an operation taking one and one-half to two hours. Now the video operator can do the total job himself in about 12 minutes. Cameramen are free to do other jobs, such as setting up audio facilities and assembling our two 47's used on the field."

Quodomine adds, "With the diascope in the lens and the automatics, the video operator just hits a button at the set-up terminal and the 47 goes through the complete set-up on its own." And, because the TK-47 covers more parameters (100 in all) than the video operator and cameraman can manually, "You're getting far more precise results. Video quality is far more consistent from telecast to telecast . . . far more uniform from camera to camera. We've had comments from a number of ball clubs in the league as to the excellent quality of pictures we're airing from Shea Stadium."

WOR-TV has also found that the TK-47 memory files have challenged the changing lighting conditions inherent to outdoor production. Lighting settings are preset for games played at night . . . or day games where there's bright sunlight or overcast conditions. By simply selecting the appropriate memory file, the proper balance is set automatically . . . saving the video operator time and providing the precise setting for the lighting conditions encountered.

Reliability, consistently and uniformly superior pictures have convinced Quodomine that his TK-47 choice was right-on-the-money. He comments, "No, we're not happy with our 47's . . . we're very, very happy!"

This year WOR received the New York State Broadcasters Association's TV award for "Outstanding Telecast of a Local Sporting Event". In Quodomine's estimation it was the superior picture quality of the TK-47 and the expertise of WOR's technical staff that clinched the award for the station. He says proudly, "As an independent you like to feel you're providing video quality comparable to the networks'. From the feedback we're getting from various sources, we believe we are."

www.americanradiohistory.com

TR-800 NEWS UPDATE

WRGB, Schenectady, NY

"We have been increasingly aware that the future of commercial production at WRGB was in the retail area," remarks Charlie King, Manager of Operations for WRGB in Schenectady, New York. "We needed increased quality in recording and more sophistication in post-production. We realized that the TR-800 might be the answer to our need for better equipment."

With two TR-800's in use at WRGB, Charlie King reports a shift towards more mobile production and relying heavily on the TR-800's for post production. "Our first editing job on the TR-800's was for our annual Christmas special. The clients and station staff were very pleased with the results," says King. An interesting side note is that the location recording was done on three different brands of portable units. All tapes were edited on the TR-800's which are equipped with the integral TR-800 editing unit. Charlie King at WRGB states, "Our clients have become very interested in going almost exclusively to 1 inch as the best marriage between ¾ inch portability and the 2 inch quality. You do encourage the local client, particularly the retailer, to come in to your shop and do your work with you. You can really be his consultant from start to finish." King concludes, "Our programming people are insisting on 1 inch quality and flexibility in their productions. Our promotional people are very intrigued with the flexibility of 1 inch. Our commercial clients have received it very favorably."

Charlie King (left) watches TR-800's in action

WEHT-TV, Evansville, Indiana

Elmer Chancellor, Director of Engineering for Gilmore Broadcasting/WEHT, and Earl Waitman, WEHT Director, at the station's new TR-800 installation

"Our local clients have been impressed with our TR-800's editing capabilities. The machines are convenient to use, the flexibility is very good, quality is very high, and we believe that clients should be very happy with the quality of work we can produce for them," says Elmer Chancellor, Director of Engineering for Gilmore Broadcasting Company/WEHT television.

WEHT is replacing its RCA quad VTR's, in service for sixteen years, with modern 1 inch machines. According to Chancellor, "We looked at the 1 inch market for quite some time before making a final decision. We believe that the RCA TR-800 with its microprocessor based control circuitry is the most modern machine on the market today. Our clients come to us for quality production work and we want to continue to maintain that image."

Earl Waitman, TV Director at the station finds that "being able to edit very accurately to the frame is something else that we're ecstatic about."

One of WEHT's two TR-800's is equipped with the Super Search Editor (SSE) option. Also microprocessor controlled, the SSE gives tape operators even more flexibility: nine independent search-to-cue points, modifiable edit point through the keyboard, a store-direct model to capture edit points on the fly, an out transfer mode, keyboard entry and playback VTR control. About SSE, Waitman says, "One tremendous feature is search to cue . . . the ability to make that same edit on that very same frame any number of times, if it's not correct the first time."

Director of Engineering Chancellor concludes, "We wanted to make sure that the equipment we purchased was state of the art, that it would serve our clients, have flexibility, be functional, and efficient. We decided that the TR-800 was the machine that would fulfill our needs, now and for the future."

Built in historic Camden, New Jersey, U.S.A., RCA's TR-800 1 inch type C helical scan VTR's are now in service in many parts of the world. New TR-800 shipments include:

BTV-6, Ballarat, Australia
Continental Color Recording, New York, NY
ECV, Enterprise ColorVideo, Crows Nest, NSW, Australia
Humphrey Video Service, London, England
KUSI-TV, San Diego, CA
Northern TV, Auckland, New Zealand
PTL (Praise The Lord), Charlotte, NC
Swell Pictures, Chicago, IL
Union Carbide, Danbury, CT

RCA

www.americanradiohistory.com

CONTINENTAL ELECTRONICS MFG. CO. ★
Box 270879, Dallas, TX 75227
214 381-7161
Stereo studio audio consoles. AM, FM transmitters; RF amps, AM stereo exciters, FM exciters, RF filters & loads, diplexers, stereo generators; FM SCA equipment; FM antennas, antenna tuning units; RF phasing network.
SEE AD PG. 144
Field Offices:
AL Dave Hultsman, 2280 Rockcreek Trail, Birmingham 35226 . . . . . 205 822-1078
CA Steve Keating, 7225 Hollywood Blvd., Suite 105, Hollywood 90046 . . . . . 213 851-6380
IL John Abdnour, Box 575, Streator 61364 . . . . . 815 672-8585
MN Jim Littlejohn, 670 North Branch Rd., Maple Plain 55359 . . . . . 612 479-2633
MO Lloyd Collins, Route 3, Box 106, Holts Summit 65043 . 314 896-5791/5365
NH Mark Hutchins, Box 13, Greenland 03840 . . . . . 603 436-4059
NJ Keith Leach, Box 16, Newton 07860 . . . . . 201 383-8797
OR Tom Cauthers, 1215 SE 73 Ave., Portland 97215 . . . . . 503 254-2818
TN Ray Evans, Box 143, Alcoa 37701 . . . . . 615 970-2572
TX Steve Schott, Box 2008, Plano 75075 . . . . . 214 423-3644

CONTINENTAL PLASTIC CARD CO. ★
Box 8408, 3591 NW 120 Ave., Coral Springs, FL 33065
305 753-0670
Plastic cards for radio promotions.

CONTINENTAL RECORDINGS, INC.
210 South St., Boston, MA 02111
617 426-3131
Audio post-production facility; recording studio; music library; jingles.

CONTROL TECHNOLOGY, INC.
2322 Davie Blvd., Ft. Lauderdale, FL 33312
800 327-4121
Relay & time insertion sequencers, computer automation controllers, complete radio program automations systems, auto time/weather announcers. Facility turnkey installations; engineering consultant; studio, set design. Distributor of full line audio & RF equipment.

CONTROL VIDEO CORP. ★
578 Division St., Campbell, CA 95008
408 866-7447
Parallel, serial & VITC machine control systems; video editor/controllers, multisource editors; SMPTE time code generators, readers & synchronizers; video business automation hardware.

CONVERGENCE CORP. ★
1641 McGaw, Irvine, CA 92714
714 549-3746
Video editor/controllers, multisource editors; time code readers; special effects generator.
See ad pg. 97

COOL LIGHT CO., INC. ★
5723 Aukland Ave., N. Hollywood, CA 91601
213 761-6116
Lamps, lighting fixtures.

COOPER GROUP, ELECTRONICS DIV.
Box 728, Apex, NC 27502
919 362-751
Tools.

COPPERWELD BIMETALLICS GROUP ★
Robinson Plaza Two, Pittsburgh, PA 15205
412 777-3000
Tower hardware, construction equipment.

CORPORATE COMMUNICATIONS CONSULTANTS, INC. ★
4250 Veterans Memorial Hwy., Holbrook, NY 11741
516 737-0903
Telecine color correctors; field-by-field, videotape-to-videotape computerized color correctors & luminance compensators.

CORRELLI JACOBS FILM MUSIC
25 W. 45 St., New York, NY 10036
212 586-6673
Audio post-production facility.

COUNTRYMAN ASSOCIATES ★
417 Stanford Ave., Redwood City, CA 94063
415 364-9988
Electret/condenser, lavalier, modular & capsule mics.
SEE AD PG. 194

COX DATA SERVICES ★
5600 Roswell Rd. NE, Suite 100 Prado N., Atlanta, GA 30342
404 256-5200
TV business automation hardware & software.

★ MEANS IT'S VERIFIED

CREATIVE TECHNOLOGY, INC. ★
853 Copley Rd., Akron, OH 44320
216 535-5778
Studio & mobile teleproduction facilities; video post-production facility.

CRL SYSTEMS
3204 S. Fair Ln., Tempe, AZ 85282
800 535-7648
AM & FM compressor/limiters, audio noise reduction.

CROSS COMMUNICATIONS CO.
934 Pearl, Suite B, Boulder, CO 80302
303 499-8888
Radio & video business automation hardware; teleconferencing & CATV consulting.

CROSSPOINT LATCH CORP. ★
95 Progress St., Union, NJ 07083
201 688-1510
Portable, compact, large & automated video production switchers, post-production switchers; RGB & encoded chromakeyers, downstream keyers; sync, black burst & color bar generators. Mic mixers, automated audio consoles; radio computer automation controllers.
SEE AD PG. 129

CROWN INTERNATIONAL, INC. ★
1718 W. Mishawaka Rd., Elkhart, IN 46517
219 294-5571
Audio preamps, line, monitor, power & dist. amps; parametric & graphic equalizers; computer automation controllers; Pressure Zone (PZM) mics.

CSI ELECTRONICS, INC.
18248 E. Rogers Cir., Boca Raton, FL 33431
305 994-6511
AM & FM transmitters; status & alarm indicators; stereo & SCA generators.

CSP, INC.
203 Airport Rd., Doylestown, PA 18901
215 345-7386
RF filters, loads, switches, power dividers, diplexers, AM sampling systems.

CUSTOM BUSINESS SYSTEMS, INC.
Box 67, Reedsport, OR 97467
503 271-3684
Radio business automation hardware.

DABURN ELECTRONICS & CABLE CORP. ★
71-B Oak St., Norwood, NJ 07648
201 768-5400
Solid core, foam dielectric & fiberoptic transmission line. Audio, video, lighting, ac & RF cable, connectors.

PETER W. DAHL CO., INC. ★
4007 Fort Blvd., El Paso, TX 79930
915 566-5365
Distributor of transformers.

BILL DANIELS CO., INC. ★
12113 Johnson Dr. Shawnee, KS 66216
913 631-5707
Catalog of broadcast equipment.

DATA COMMUNICATIONS CORP. (BIAS) ★
3000 Directors Row, Memphis, TN 38131
901 345-3544
Business automation interfaced master control switchers; video business automation.
SEE AD PG. 177

DATAMETRICS-DRESSER
340 Fordham Rd., Wilmington, MA 01887
617 658-5410
SMPTE time code readers, generators.

DATA PRECISION CORP.
Electronics Ave., Danvers, MA 01923
617 777-1401
Waveform analyzers; dc voltage standards; voltmeters, multimeters, capacitance meters, ohm meters; thermometers.

DATATEK CORP. ★
1121 Bristol Rd., Mountainside, NJ 07092
201 654-8100
Audio preamps, line, monitor & power amps, DAs. Serial interface video routing switchers; serial interface machine control; black burst generators; pulse amps, video DAs.
SEE AD PG. 51
Refer to Reps/Distributors section

DATATRON, INC. ★
2942 Dow Ave., Tustin, CA 92680
714 554-9970
Video editor/controllers, multisource editors; SMPTE time code generators, readers, synchronizers; proprietary time code system.

www.americanradiohistory.com

ELIMINATING HORIZONTAL SHIFT... AND MORE!

embodying the unique feature of color field indentification will provide for the economic implementation of an SCH timed facility as per RS170A, and eliminate the shift problems plaguing your match frame editing operations.

The SYNC PROC,™ which combines a sync generator (master and slave capability) with a processing amplifier, contains additional options including VITS and VIRS, Video Source Identification, Blanking Width Verification, and Digital Remote Control.

Through the use of data bus, and multiplexing, advanced digital/analog circuit design,

custom hybrid circuits, software, microprocessors and system integration, Grumman is cost effectively applying its aerospace design and manufacturing capabilities to areas such as master control room systems, satellite transmission processing, and machine controls.

For more information write Marketing Department, MS A24-43, Grumman Aerospace Corporation, Bethpage, N.Y. 11714, or call (516) 435-6089.

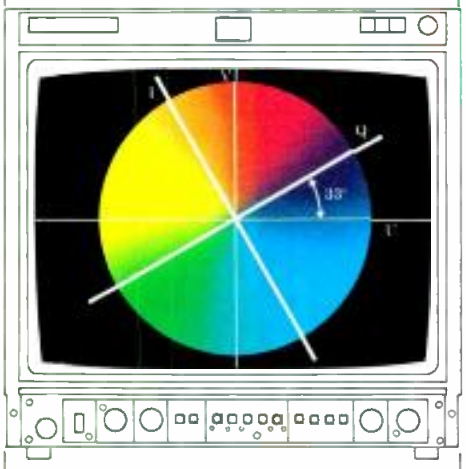
EOPLE. PRIDE. PERFORMANCE.

GRUMMAN

Circle 151 on Reader Service Card

www.americanradiohistory.com

ASACA/ Shibasoku's CMM Series monitors decode color on the I/Q axis.



FEATURES

- 20" and 14" models available— high resolution delta CRTs.
- I-Q wide band demodulation system.
- Complete board interchangeability between models.
- Switchable high performance comb filter and aperture correction.
- Multi-standard capabilities (NTSC, PAL, SECAM) on all models. Switchable from the front panel (20" model). No adjustments necessary because of digital sync circuitry.
- Dynamic focus insures perfect focus on all areas of CRT. Adjustable from the front panel.
- Special feedback circuits guard against color changes due to variations in temperature.
- Active convergence— 40 controls allow precise adjustment on all areas of CRT.
- Pulse cross with expanded vertical blanking interval.
- OPTIONS...Built-in color bar or cross hatch patterns. Built-in safe title marker generator. Multi-standards. RGB inputs.
- TWO YEAR WARRANTY ON ALL PARTS AND LABOR INCLUDING THE CRT.

ASACA

ASACA/SHIBASOKU CORP. OF AMERICA

12509 Beatrice St.
Los Angeles, CA 90066
Circle 152 on Reader Service Card

MANUFACTURERS

DATATRONIX, INC.
2100 Reston Ave., Restan, VA 22091
703 620-5300
Portable, mono & stereo studio, automated, audio for TV mixing consoles; AM & FM compressor/limiters, parametric & graphic equalizers; preamps, line, monitor & power amps, DAs, amp power supplies; slide attenuators; audio patch panels. Audio test signal generators.

DATUM, INC. ★
1363 S. State College Blvd., Anaheim, CA 92806
714 533-6333
SMPTE time code generators, readers & synchronizers; video time, data insertion devices; digital timers; remote control systems; video editor/controllers; auto tape search systems. Portable video transmitters.

DAVIS & SANFORD CO., INC. ★
24 Pleasant St., Box 1002, New Rochelle, NY 10802
914 632-1636
Tripods. heads & dollies.

★ MEANS IT'S VERIFIED

dbx, INC. ★
71 Chapel St. Newton, MA 02195
617 964-3210
ALC & AGC amps, AM & FM compressor/limiters, parametric equalizers; audio special effects, noise reduction systems; low-frequency extenders; dB meters.

DELCOM CORP. ★
6019 S. 66 E. Ave., Tulsa, OK 74145
800 331-5461
Modified Sony U-Matic VCR; facility turnkey installations, engineering consultant, mobile vehicle construction.

DELTA ELECTRONICS, INC. ★
5730 General Washington Dr., Alexandria, VA 22312
703 354-3350
ALC, AGC amps; AM compressor/limiters; coaxial transfer switches; control panels; RF switches, DA equipment, ATS equipment; frequency modulation controller; meter jacks & plugs; remote sample rectifier circuits; antenna monitor sampling transformers; antenna monitors; RF generators; impedance bridges; status & alarm indicators; common point bridges; power controllers; base current & common point RF metering; remote control systems; pulse reflectometers.
SEE AD PG. 201

DELTAMOD CORP. ★
2823 Ninth St., Berkeley, CA 94710
415 548-4858
Phase control matrixing; audio test tapes; audio noise reduction.

DETERS TOWER SERVICE, INC. ★
Box 2121, Des Maines, IA 50310
515 274-3171
Tower & antenna installation, maintenance.

DEVLIN PRODUCTIONS, INC. ★
150 W. 55 St., New York, NY 10019
212 582-5572
Studio & mobile teleproduction facilities; video post-production facility.

DE WOLFE MUSIC LIBRARY, INC.
25 W 45 St., New York, NY 10036
212 586-6673
Production music library & sound effects.

DEXCEL, INC. ★
2285C Martin Ave. Santa Clara, CA 95050
408 727-9833
Receive only satellite earth stations; LNAs, LNA down converters.

DICTAPHONE CORP. ★
120 Old Post Rd., Rye, NY 10580
914 967-7300
Tape-based loggers.

DIELECTRIC COMMUNICATIONS
Tower Hill Rd., Raymond, ME 04071
800 341-9678
RF loads; RF power meters & wattmeters.

DIGIMAX INSTRUMENTS CORP. ★
5625 Kearny Villa Rd., San Diego, CA 92123
714 569-6582
Frequency counters & accessories.

DIGITAL BY DICKINSON ★
B547-9 Westinghouse Plaza, Bloomfield, NJ 07003
201 429-8996
Digital audio equipment rentals.

DIGITAL SERVICES CORP. ★
825 NW 13 St., Gainesville, FL 32601
904 377-8013
Digital video effects processors.
SEE AD PG. 212

DIGITAL VIDEO PRODUCTIONS ★
62 Sauth Franklin St., Wilkes-Barre, PA 18773
717 824-1161
Studio & mobile teleproduction facilities; video post-production facility.

DIGITAL VIDEO SYSTEMS ★
716 Gordon Baker Rd., Willowdale, Ont., M2H 3B4, Canada
416 499-4826
Digital TBCs, dual-channel TBCs, frame & field synchronizers; dropout compensators; comb decoders; A/D & D/A converters; phasers.

DI-TECH, INC. ★
48 Jefryn Blvd., Deer Park, NY 11729
516 667-6300
Computer automation controllers; audio DAs. Parallel & serial interface routing switchers; video signal, cable equalizers; video DAs.
SEE AD PG. 207

DOCUVID ★
220 E. 23 St., New York, NY 10010
212 532-6903
ENG production services, facilities.

DOLBY LABORATORIES ★
731 Sansome, San Francisco, CA 94111
415 392-0300
Audio noise reduction systems.
SEE AD PG. 113

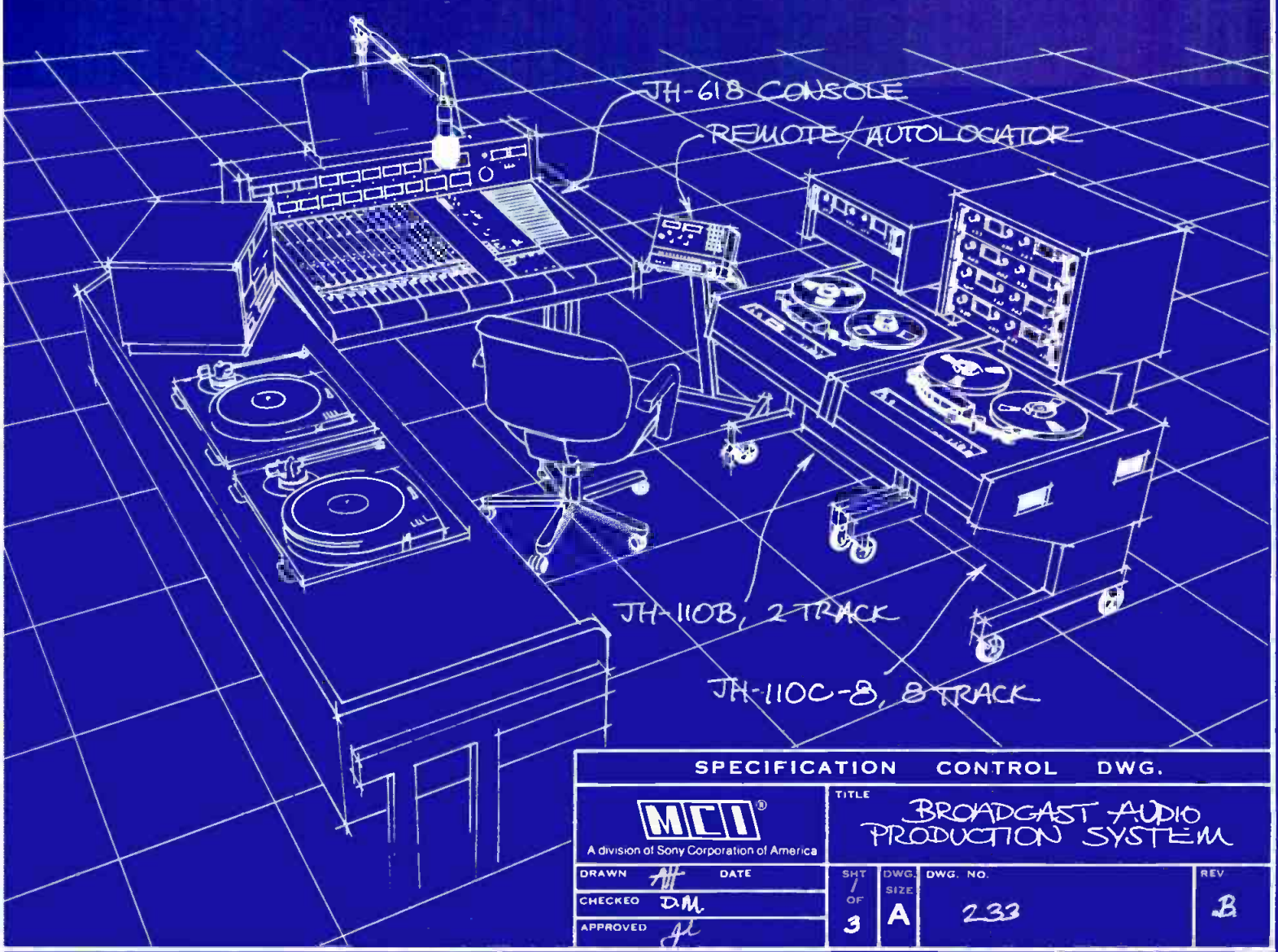
www.americanradiohistory.com

Profitable in-house production starts with the right system.

Designed by MCI.

Time was when you could get by on in-house production with a couple of beat-up tape recorders and a turntable. But audiences and advertisers of today are demanding more. And that means a total production system that allows you to do everything from overdubbing and track bouncing to live multitrack recording. Now the company that has equipped more award winning studios than any other has designed a Total Production Package priced within your budget. You get an 8-track recorder, 2-track recorder and a studio quality console with 10 microphone and 5 stereo line inputs. Plus remote control, an accurate spot timer, 10 programmable "search and find" memories, variable speed and dozens of other features designed to make your job easier and your product better. MCI even offers a comprehensive user training program in the creative use and the maintenance of this system.

Contact your nearest MCI dealer today about the quality design (and current price advantages) of MCI's new Total Production Package. Your advertisers will love you for it.



SPECIFICATION CONTROL DWG.

MCI®
A division of Sony Corporation of America

TITLE: BROADCAST AUDIO PRODUCTION SYSTEM

DRAWN	DATE	SHT / OF	DWG. SIZE	DWG. NO.	REV
CHECKED DM		3	A	233	B
APPROVED					

1400 W. Commercial Blvd., Fort Lauderdale, FL 33309 USA, Telephone (305) 491-0825, Telex 514362 MCI FTL

TWA-B001-82

Circle 153 on Reader Service Card

www.americanradiohistory.com

DORROUGH ELECTRONICS
5221 Collier Pl., Woodland Hills, CA 91364
213 999-1132
AM & FM compressor/limiters; LED audio level indicators.

DRAKE-CHENAULT ENTERPRISES, INC. ★
Box 1629 Canoga Park, CA 91304
213 883-7400
Syndicated radio programming; engineering consultant.

DUART VIDEO ★
245 W. 55 St., New York, NY 10019
212 757-3681
Video post-production facility.

DUBNER COMPUTER SYSTEMS ★
158 Linwood Plaza, Fort Lee, NJ 07024
201 592-6500
Telecine color correctors; character generators; digital art/paint systems, bit pad & camera/VTR digitizers, weather symbol inserters; color correctors. Engineering consultant.
SEE AD PG. 17
Refer to Reps/Distributors section

VICTOR DUNCAN, INC. ★
2659 Fondren, Dallas, TX 75206
214 369-1165
Video & film production equipment rental, sales & service.

DUNCAN ELECTRONICS
2865 Fairview Rd., Costa Mesa, CA 92626
714 545-8261
Slide attenuators.

DYMA ENGINEERING ★
Box 1697, Taos, NM 87571
505 758-8686
Audio preamps, line, monitor & power amps, DAs; equalizers & filters; special effects & reverb; mono, stereo & audio for TV mixing consoles; dynamic mics; patch panels; RF switchers; surge protectors. Equipment rental, radio & TV studio construction; mobile van construction.

DYNACOM ELECTRONICS, LTD. ★
590 Commerce Park Dr., Ste. 125, Marietta, GA 30060
404 428-3100
Tape duplicators. PTV scramblers; MDS downconverters. Facility turnkey installations.

DYNAIR ELECTRONICS, INC. ★
5275 Market St., San Diego, CA 92114
714 263-7711
Audio preamps, DAs; audio switchers. manual, automated & business automation interfaced master control switchers; serial interface routing switchers; sync generators; video signal, cable equalizers; pulse amps, video DAs; RF modulators.

DYNATECH DATA SYSTEMS
7644 Dynatech Ct., Springfield, VA 22153
703 569-9000
Coaxial & twin axial patching equipment.

EAST COAST VIDEO SYSTEMS, INC.
548 Broadway, New York, NY 10012
212 431-7453
Engineering consultants; studio, set design.

EASTMAN KODAK CO., MOTION PIC. & A/V DIV. ★
343 State St., Rochester, NY 14650
716 724-4000
Motion picture film, projectors, film processors.
SEE AD PG. 49

ECHOLAB, INC. ★
175 Bedford Rd., Burlington, MA 01803
617 273-1512
Compact studio/mobile & automated production switchers; post-production switchers.

ECONCO BROADCAST SERVICE, INC.
1318 Commerce Ave., Woodland, CA 95695
916 662-7553
RF power tubes, vacuum tubes.

EDCOR ★
16782 Hale Ave., Irvine, CA 92714
714 556-2740
RF intercom systems; dynamic, wireless, lavalier mics; audio preamps; line, monitor & power amps; video signal multiplexers.

EDIT/CHICAGO VIDEO ★
160 East Grand Ave., Chicago, IL 60611
312 280-2200
Video post-production facility.

★ MEANS IT'S VERIFIED

EDITEL/CHICAGO ★
301 E. Erie, Chicago, IL 60611
312 440-2360
Studio & mobile teleproduction facilities; video post-production facility.

EDITEL/LA ★
729 N. Highland, Hollywood, CA 90038
213 931-1821
Studio & mobile teleproduction facilities; video post-production facility.

EDITEL/NEW YORK ★
222 E. 44 St., New York, NY 10017
212 551-8400
Studio & mobile teleproduction facilities; video post-production facility.

EECO, INC. ★
1601 E. Chestnut Ave., Santa Ana, CA 92701
714 835-6000
Electronic audio editors; SMPTE time code synchronizers. VITC machine control systems; video editor/controllers; SMPTE time code generators, readers; proprietary time code systems.

EEG ENTERPRISES, INC.
1 Rome St., Farmingdale, NY 11735
516 293-7472
SMPTE time code generators, readers; video source identification; closed captioning, teletext.

EELA AUDIO ★
Box 786, Bremerton, WA 98310
800 426-6170
Mic mixers; portable, mono & stereo, & audio for TV mixing consoles.

EEV, INC. ★
7 Westchester Plaza, Elmsford, NY 10523
914 592-6050
Camera pickup tubes; RF power tubes, UHF TV klystrons. Digital clocks; vacuum tubes, rectifiers, surge protectors.
SEE AD PG. 133
Field Offices:
GA Ste. 100E, 15 Dunwoody Park
Atlanta 30338 . . . . . 404 394-9201
IL 2073 Arleen Ct., Schaumburg
60194 . . . . . 312 843-8417
NY 250 Hamilton Dr.,
Snyder 14226 . . . . . 716 839-5959
TX Route 1,
Anna 75003 . . . . . 214 837-2464
WA 19001 40th Pl. NE,
Seattle 98155 . . . . . 206 363-2200

EG&G ★
35 Congress St., Salem, MA 01970
617 745-3200
Tower lighting.
SEE AD PG. 120

EIDSON ELECTRONIC CO. ★
Box 3751, Temple, TX 76501
817 773-3901
Frequency control crystals for AM, FM & TV transmitters.

EIGEN VIDEO ★
Box 848, Nevada City, CA 95959
916 272-3461
Video disc action recorder, video animation controller; framestores, video noise reducers; analog still storage.

EIMAC, DIV. VARIAN ★
301 Industrial Way, San Carlos, CA 94070
415 592-1221
Vacuum tubes.
SEE AD PG. 89
Field Offices:
AL 500 Wynn Drive, N.W., Ste. 302,
Huntsville 35805 . . . . . 205 837-9225
AZ 7345 E. Earll Drive, Ste. 30,
Scottsdale 85251 . . . . . 602 947-5461
CA 375 Distel Circle, Ste. C-4,
Los Altos 94022 . . . . . 415 968-7630
CA 2901 Wilshire Blvd., Ste. 205,
Santa Monica 90403 . . . . . 213 828-5588
FL 314 South Missouri, Ste. 209,
Clearwater 33516 . . . . . 813 446-8513
GA United Finance Bldg., Ste. #4,
1600 Watson Blvd.,
Warner Robins 31093 . . . . . 912 922-2202
IL 205 W. Touhy Ave.,
Park Ridge 60068 . . . . . 312 825-6686
MA 83 Second Ave.,
Burlington 01803 . . . . . 617 272-8532
MD 4701 Lydell Rd.,
Cheverly 20781 . . . . . 301 773-7010
NJ 25 Commerce Dr.,
Cranford 07016 . . . . . 201 276-9050
NJ 304 Harper Dr.,
Moorestown 08057 . . . . . 609 235-6800
NY 6489 Ridings Road,
Syracuse 13206 . . . . . 315 437-2568
OH 4130 Linden Ave., Ste. 225,
Dayton 45432 . . . . . 513 258-3930
TX 13531 N. Central Exy., Ste. 2343,
Dallas 75243 . . . . . 214 235-2385
Refer to Reps/Distributors Section

www.americanradiohistory.com

GAIN VIDEOCONFIDENCE™!

NEW JVC CR-4700U PORTABLE ¾"U TAPEHANDLER

Here's something really new in a portable ¾" U videocassette recorder: JVC's exclusive VideoConfidence™ head. Now you can be absolutely confident that you're getting on tape what you see in the camera monitor...because you review as you record!

The picture you see in the monitor is fed to it from the tape a split second after recording. What you get is what you see.

There's no other portable ¾" U VCR with this feature.

But that's not all the CR-4700U offers. It has SMPTE time code capability to speed post-production editing. Head switching is in the vertical interval to eliminate undesirable switching points. There's microprocessor-based logic for full remote control. You can do assemble editing in the field with the automatic editing function.

And how about a video S/N ratio of better than 46dB! No other portable ¾" U VCR has so many valuable features.

See it NOW at your JVC dealer. For more information write

JVC®

JVC COMPANY OF AMERICA
Professional Video Division

Circle 154 on Reader Service Card

© 1982 US JVC COR

JVC COMPANY OF AMERICA
Prof. Video Div., Dept. BM/E 9/82
41 Slater Drive, Elmwood Park, NJ 07407
JVC CANADA INC., Scarborough, Ont.

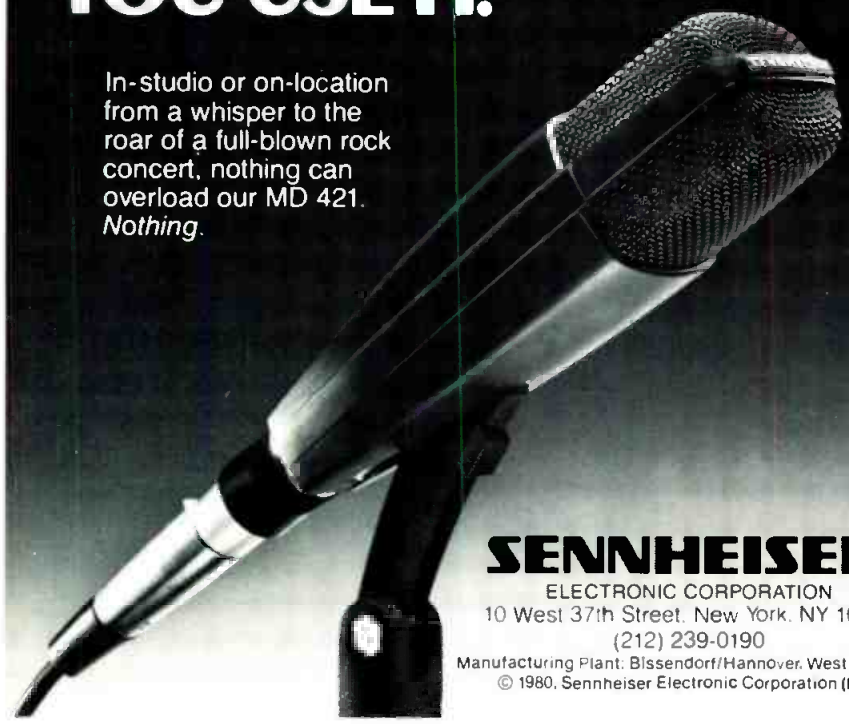
For faster action, call toll-free
800-821-7700, Ext. 7005.
(In Missouri: 800-892-7655, Ext. 7005.)

WARNING TO PURCHASERS: The unauthorized recording of copyrighted broadcast programming for commercial purposes is copyright infringement

www.americanradiohistory.com

NO OVERLOAD. NO MATTER WHERE YOU USE IT.

In-studio or on-location from a whisper to the roar of a full-blown rock concert, nothing can overload our MD 421. *Nothing.*



SENNHEISER
ELECTRONIC CORPORATION
10 West 37th Street, New York, NY 10018
(212) 239-0190
Manufacturing Plant: Bissendorf/Hannover, West Germany
© 1980, Sennheiser Electronic Corporation (N.Y.)

Circle 155 on Reader Service Card

800-526-0242*

That's the fastest way to get Comprehensive's all-new professional video accessories catalog in your hands.

But it's more than just a catalog-it's a veritable encyclopedia of video products that will save you time and money, while making your video productions more professional, creative and enjoyable. Including hundreds of hard-to-get and exclusive, new items.

Just a quick look between the covers will show you why our new catalog is so aptly named.

Comprehensive
VIDEO SUPPLY CORPORATION
THE COMPLETE BOOK OF PROFESSIONAL VIDEO ACCESSORIES
148 Veterans Drive, Northvale, New Jersey 07647 • (201) 767-7990
Call Toll-Free-800-526-0242 except in N.J. • Telex No. 13-5139
$5.00
1982 EDITION

GET YOURS FREE TODAY!

*In New Jersey and Metro New York, Call (201) 767-7990

© 1982, Comprehensive Video Supply Corporation

Circle 156 on Reader Service Card

MANUFACTURERS

ELCOM BAUER
6199 Warehouse Way, Sacramento, CA 95826
916 381-3750
Mono audio consoles; single-deck cart player/recorders; ALC, AGC amps; AM & FM compressor/limiters. AM & FM transmitters; AM & FM exciters; antenna tuning units.

ELECTOR ★
5128 Calle del Sal, Santa Clara, CA 95050
408 727-1506
NTSC & RGB color video monitors.
SEE AD PG. 37
Refer to Reps/Distributors section

ELECTRO CONTROLS ★
2975 S. 300 West, Salt Lake City, UT 84115
801 487-9861
Lighting control boards, dimmer packs, diffusion & efx material, cyc lighting.

★ MEANS IT'S VERIFIED

ELECTROHOME, LTD. ★
809 Wellington St., N. Kitchener, Ont., N2G 4J6 Canada
519 744-7111
Color & high-resolution monochrome monitors; large screen projectors.

ELECTRO IMPULSE, INC. ★
116 Chestnut St., Red Bank, NJ 07701
201 741-0404
RF loads; RF power meters, wattmeters, calorimeters.
SEE AD PG. 194

ELECTRONIC DEVICES, INC. ★
21 Gray Oaks Ave., Yonkers, NY 10710
914 965-4400
Rectifiers.

ELECTRONICS DIVERSIFIED, INC. ★
1675 NW 216, Hillsboro, OR 97123
503 645-5533
Lighting control boards, dimmer packs.

ELECTRONIC FIELD PRODUCTIONS ★
725 University Dr., Arlington Heights, IL 60004
312 577-1811
Mobile teleproduction facility; video post-production facility.

ELECTRO & OPTICAL SYSTEMS, LTD.
31 Progress Ct., Scarborough, Ont., M1G 3V5 Canada
416 439-9333
SMPTE time code synchronizing systems; PPM meters; SMPTE time code readers, generators; video monitors; graphic color displays.

ELECTRO & OPTICAL SYSTEMS, LTD. U.S.
5128 Calle del Sol, Santa Clara, CA 95050
408 727-1506
SMPTE time code synchronizing systems; PPM meters; SMPTE time code readers, generators; video monitors; graphic color displays.

www.americanradiohistory.com

MANUFACTURERS

ELECTRO SOUND, INC. ★
160 San Gabriel Dr., Sunnyvale, CA 94086
408 245-6600
Audio tape duplicators; replacement audio heads, alignment & tension gauges; audio cassettes & test tapes, tape loaders; splicing blocks & tape; audio test signal generators.

ELECTRO-VOICE, INC. ★
600 Cecil St., Buchanan, MI 49107
616 695-6831
Mic mixers; portable & studio stereo audio consoles; graphic equalizers, analog special effects & reverb, mechanical reverb; monitor speakers; dynamic, electret/condenser, shotgun, lavalier, modular & capsule mics; mic stands, booms & dollies; line, monitor & power amps.
SEE AD PG. 18

EMCEE BROADCAST PRODS. ★
Box 68, White Haven, PA 18661
800 233-6193
VHF & UHF transmitters; translators & LPTV equipment; MDS & ITFS transmitters.
SEE AD PG. 142

EMERGENCY ALERT RECEIVER, INC. ★
1 W. 30 St., New York, NY 10001
212 695-4767
EBS two-tone systems; FM SCA equipment.

ENCLOSURE CORP.
4529 Adams Circle, Cornwells Heights, PA 19020
215 638-9550
19-inch equipment racks.

E-N-G CORP. ★
1009-A Shary Circle, Cancord, CA 94518
415 798-4060
ENG microwave-equipped mobile vehicles with telescoping roof masts.

ENG HELICOPTER SATELLITES, LTD. ★
9919 Carter Rd., Bethesda, MD 20817
301 469-8109
Helicopter-mounted camera stabilizing systems; complete helicopter microwave & communication system rentals.

ENGINEERING LAB, INC., VIDEO SPECIALTIES DIV. ★
11535 Sorrento Valley Rd., San Diego, CA 92121
714 450-1067
Parallel, serial & VITC machine control systems; custom remote control.

THE ENSTROM HELICOPTER CORP. ★
Box 277, Menominee, MI 49858
906 863-9971
ENG microwave-equipped helicopters.

ENTERTAINMENT SPORTS PROGRAMMING NETWORK, INC. ★
ESPN Plaza, Bristol, CT 06010
203 584-8477
Studio & mobile teleproduction facilities; video post-production facility.

WHY BUY TWO LENSES WHEN THIS ONE WILL DO?

Schneider 14X ENG/EFP lens zooms from super wide angle to long telephoto.

Changing lenses to handle changing conditions could cost you a once-in-a-lifetime shot. And that's why you should know about the Schneider 14X ENG/EFP lens. It gives you two-lens versatility in an economical one-lens package.

It can power zoom from 9mm–126mm. Or with the built-in 2X extender from 18mm–252mm. With the 6.3mm–9mm aspheric lens attachment, it can power zoom on the super wide angle shots. And, when the action calls for close and tight, it's got macro focusing.

The Schneider 14X is designed to bring out the best in Ampex, CEI, Fernseh, Hitachi, Ikegami, JVC, NEC, Panasonic, Philips, RCA, Sharp, Sony, Thomson and Toshiba ⅔" cameras. Lightweight, compact, ruggedly constructed, and weather resistant, it comes with a complete line of accessories. Superb European optics combined with excellent f/1.7 sensitivity bring back crisp, clear pictures even under low light level conditions.

In addition, Schneider offers the 14X lens in a ½-inch format for the new one-piece VCR cameras such as RCA Hawkeye, Panasonic and Sony. Schneider broadcast lenses are available throughout the United States and Canada from: **TELE-CINE CORP.,** 400 Crossways Park Drive, Woodbury, NY 11797; (516) 496-8500.

Schneider 14X ENG/EFP

Tele-Cine Corp. is a subsidiary of Schneider Corporation of America.

Circle 157 on Reader Service Card

www.americanradiohistory.com

ENTERPRISE ELECTRONICS CORP.
Box 1216, Enterprise, AL 36330
205 347-3478
Weather radar systems.

ENVIRONMENTAL CONTAINER SYSTEMS, INC.
Box 188, Grants Pass, OR 97526
503 476-8871
Empty videotape reels & containers; foam insert & rack configuration transportation cases; 19-inch equipment racks.

ESC ELECTRONICS CORP.
534 Bergen Blvd., Polisades Park, NJ 07650
201 947-0400
Filters, delay lines.

ESE ★
142 Sierra St., El Segundo, CA 90245
213 322-2136
LED audio level indicators; SMPTE time code readers, generators; proprietary time code systems. Digital clocks, master & slave clocks, timers, time distribution equipment.
SEE AD PG. 134-135
Refer to Reps/Distributors section

EUMIG (USA), INC. ★
Loke Success Business Pk, 225 Community Dr., Great Neck, NY 11020
516 466-6533
Audio preamps, line & monitor amps, amp power supplies; audio cassette decks. Cine cameras.

EVENTIDE CLOCKWORKS, INC. ★
265 W. 54 St., New York, NY 10019
212 581-9290
ALC & AGC amps, digital audio special effects, digital delay & reverb, time compression/expansion, real-time audio analyzers. Video time compression/expansion; digital video effects processors. Audio spectrum analyzers.
SEE AD PG. 28, 161
Refer to Reps/Distributors section

EXCALIBUR INDUSTRIES ★
12427 Foothill Blvd., Loke View Terrace, CA 91342
213 899-2547
Foam insert & rack configuration transportation cases.

EXCALIBUR VIDEO SYSTEMS, INC. ★
4015 Wilshire Blvd., Los Angeles, CA 90010
213 384-5175
Studio & mobile teleproduction facilities; video post-production facility.

EXR ★
3373 Oak Knoll Dr., Brighton, MI 48116
313 227-6122
Audio processing "exciter."

FAIRCHILD CAMERA & INSTRUMENT/ CCD IMAGING DIV.
4001 Miranda Ave., Palo Alto, CA 94304
415 493-3100
Video delay lines; CCD line sensor for telecines.

FANTASEE LIGHTING
404 N. River, Ypsilanti, MI 48197
313 482-6565
Lighting, studio & set design; lighting equipment rental service; stage, studio rentals; engineering consultant.

FAROUDJA LABORATORIES, INC. ★
946 Benicia Ave., Sunnyvale, CA 94086
408 245-1492
Video decoders, comb filter decoders; video noise reducers, image enhancers, color correctors.

FARRTRONICS, LTD. ★
151 Bentley St. Unit #1, Markham, Ont., L3R 3X9 Canada
416 475-6720
Hardwired intercom systems; audio patch panels; audio DAs; dc-controlled audio console.

FAX PRODUCTIONS ★
4810 Auburn Ave., Bethesda, MD 20814
301 652-7800
Studio & mobile teleproduction facilities; video post-production facility.

F&B/CECO, INC. ★
315 W. 43 St., New York, NY 10036
212 974-4600
Hajnal snorkel lens; tripods, heads; lamps, HMI & CSI fixtures, quartz fixtures, lighting stands & rigging, diffusion & efx material, cyc lighting; nicad batteries & chargers, generators; splicing blocks, tape; mic stands, booms & dollies; lens filters; audio & lighting cable; equipment rental service.

FIBERBILT ★
601 W. 26 St., New York, NY 10001
212 675-5820
Foam insert & rack configuration transportation cases.

★ MEANS IT'S VERIFIED

FIDELIPAC CORP. ★
Box 808, Moorestown, NJ 08057
609 235-3511
Tape alignment & tension gauges; audio carts, test tapes, empty reels & carts, bulk erasers, cart labels; audio splicing blocks & tape; pickup arms, phono cartridges; dynamic, electret/condenser, shotgun & lavalier mics; mic stands, booms & dollies; studio warning lights; wow & flutter meters; tape storage units.

FILM/VIDEO EQUIPMENT SERVICE CO., INC. ★
1875 S. Pearl St., Denver, CO 80210
303 778-8616
Equipment rental service.

FINNTEK, LTD.
12797 S. 2230 West, Box 235, Riverton, UT 84065
801 254-6398
Mono, stereo & audio for TV mixing consoles; audio & video test signal generators.

IMERO FIORENTINO ASSOC., INC. ★
44 W. 63 St., New York, NY 10023
212 246-0600
Lighting, studio & set design services.

FIRST COMMUNICATIONS, INC. ★
3095-H Presidential Dr., Atlanta, GA 30340
404 458-0901
Studio & mobile teleproduction facilities; video post-production facility.

FIRSTCOM BROADCAST SERVICES, INC.
13747 Montfort Dr., Dallas, TX 75240
214 934-2222
Music library; music & ID production, commercial production.

FISHER BERKELEY CORP.
5800 Christie Ave., Emeryville, CA 94608
415 655-9696
Hardwired intercom systems.

FITZCO SOUND, INC. ★
204 N. Midhiff Midland, TX 79701
915 684-0861
Audio equipment rental service; audio engineering consultant.

FLASH TECHNOLOGY CORP. OF AMERICA
55 Loke Street, Noshua, NH 03060
603 883-6500
High-intensity beacons for towers.

FLORIDA PRODUCTION CENTER ★
150 Riverside Ave., Jacksonville, FL 32202
904 354-7000
Studio & mobile teleproduction facilities; video post-production facility.

JOHN FLUKE MFG. CO., INC.
Box C9090, MS25DC, Everett, WA 98206
206 356-5400
RF test signal generators; voltmeters, multimeters, dB meters.

FLUXCOM, INC. ★
1390 N. McCan St., Anaheim, CA 92806
714 630-8280
Bulk audio tape erasers.

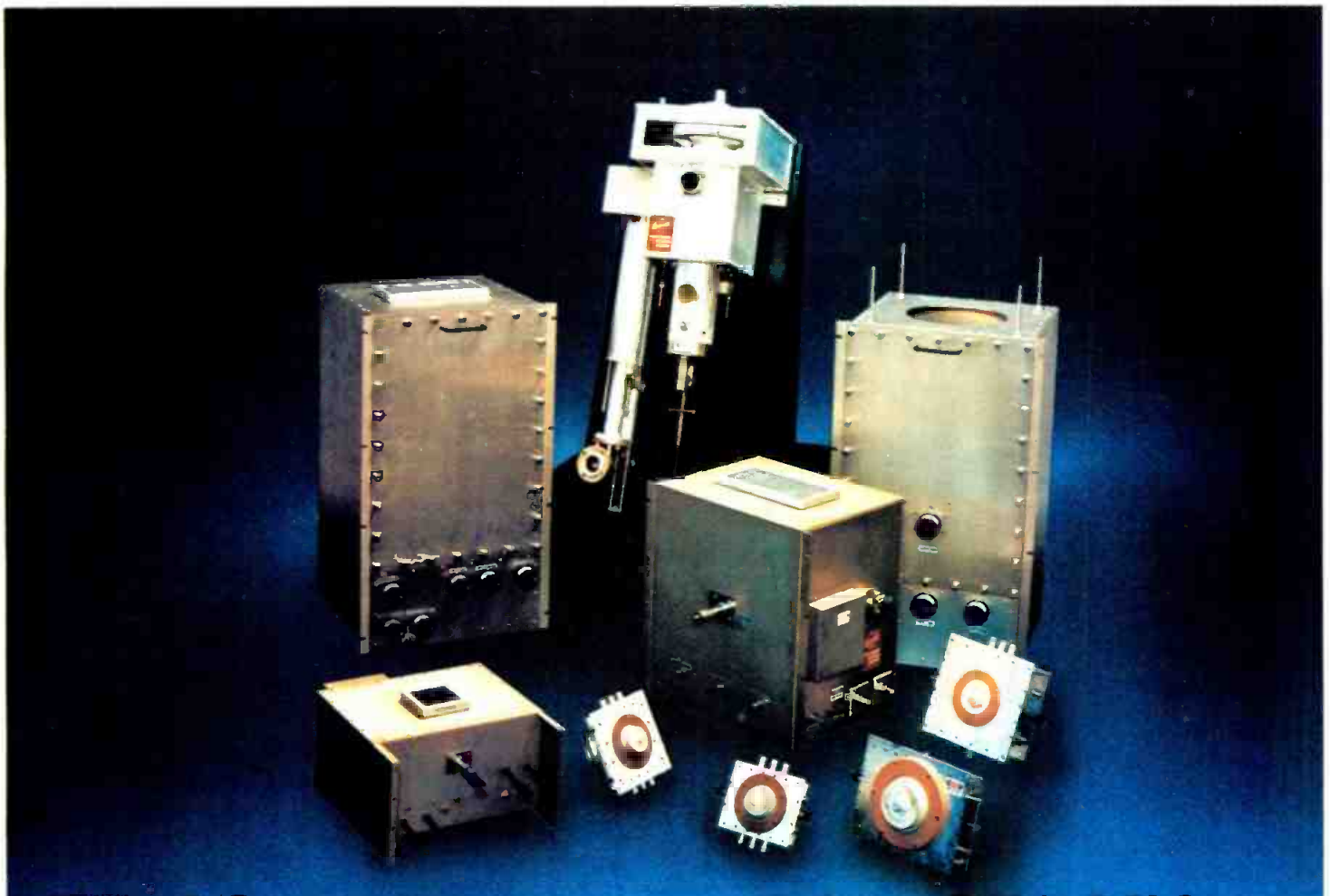
FOR-A CORP. ★
1680 N. Vine St., Los Angeles, CA 90028
213 467-8412
Character generators, screen drawing systems, colorizers & title keyers; SMPTE time code generators/readers; sync, black burst & color bar, safe title area & countdown generators; TBCs, frame synchronizers, image & color enhancers; video DAs; timers.
SEE AD PG. 175
Refer to Reps/Distributors section

FOROX CORP. ★
393 West Ave., Stamford, CT 06902
203 324-7400
Animation cameras & stands.

FORTEL, INC. ★
6649 Peachtree Industriol Blvd., Norcross, GA 30092
404 449-4343
Digital TBCs, frame synchronizers, noise reducers, image enhancers, error correctors. Dist. of Faroudja image enhancement system.
SEE AD PG. 123
Field Offices:
CA 946 Benicia Ave., Sunnyvale 94086. . . . . 408 245-1537
CT 1958 Main St., Stratford 06497 . . . . . 203 377-1809

FORT WORTH TOWER CO.
1901 E. Loop 820 S., Box 8597, Forth Worth, TX 76112
817 457-3060
Towers, masts, tower hardware & construction equipment, tower lighting; receive only & transportable satellite earth stations.

www.americanradiohistory.com



EIMAC cavities cover 54 to 970 MHz at power levels to 30 kW —our design or yours

Varian EIMAC has complete cavity design and production capability. We make sure that tube and cavity are compatible. If it isn't an off-the-shelf-item, we have the designers and engineers for any specific job.

EIMAC has expertise in all disciplines including pulse, CW, FM, and TV. We match tube, power, bandwidth and operating mode to achieve optimum performance.

More information on EIMAC cavities and tubes is available in our Cavity Capability brochure from Varian EIMAC. Or for prompt consideration of your special design requirements, contact Product Manager, Varian EIMAC, or the nearest Varian Electron Device Group sales office. Call or write today.

EIMAC Cavity	Matching EIMAC Tube	Tuning Range (MHz)	Power Output
CV-2200	4CX20,000A	86–108	30 kW
CV-2220	3CX1500A7	86–108	1.5 kW
CV-2225	4CX3500A	86–108	5 kW
CV-2240	3CX10,000U7	54–88	10 kW†
CV-2250	3CX10,000U7	170–227	10 kW†
CV-2400	8874	420–450	300/1250 W*
CV-2800	3CX400U7	850–970	225 W
CV-2810	3CX400U7	910–970	190 W

*pulsed power
†peak sync, or 2.5 kW combined in translator service

Electron Device Group
Varian EIMAC
301 Industrial Way
San Carlos, California 94070
415-592-1221

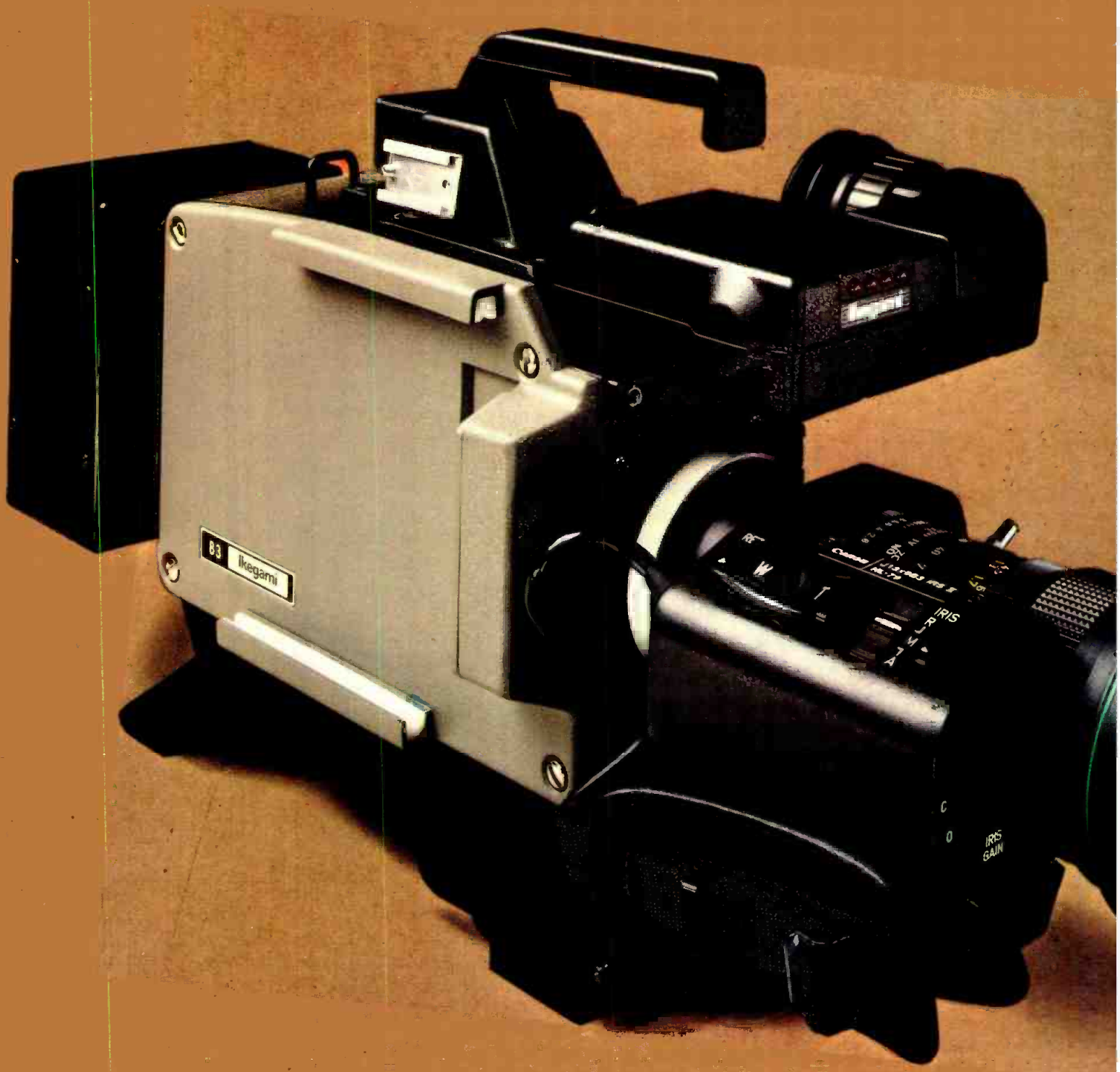
Varian A.G.
Steinhauserstrasse
CH-6300 Zug, Switzerland
Tel: (042) 23 25 75
Telex: 78 841

varian

Circle 166 on Reader Service Card

www.americanradiohistory.com

Today's top compact



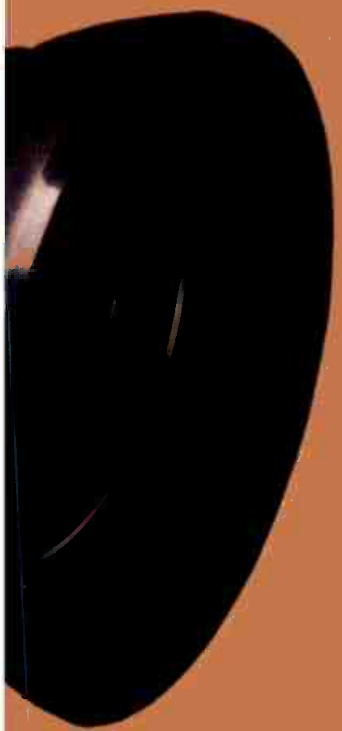
Ikegami Electronics (USA) Inc., 37 Brook Avenue, Maywood, NJ 07607. (201) 368-9171
Northeast: (201) 368-9171 ☐ **West Coast:** (213) 534-0050 ☐ **Southwest:** (713) 445-0100 ☐ **Southeast:** (813) 884-2046 ☐ **Canada:** (201) 368-9179

www.americanradiohistory.com

is ready for tomorrow.

The leader in ENG cameras has just redefined the performance standards. Meet the Ikegami HL-83. It's destined to become the premier compact ENG camera. First, it puts legendary Ikegami picture quality and dependability into the smallest, lightest (10 lbs with viewfinder), easiest-handling package we've ever made. What's more, the HL-83 is the heart of a total, flexible system that's ready to accept new technology as it becomes available. So the state-of-the art HL-83 will stay that way.

For starters, the HL-83 is extremely compact and well balanced. It's about the size of competitive one-tube cameras—yet, it's a top quality, three-tube, prism optics design that's truly up to the highest broadcast standards. And it uses proven, readily available components. Inside are ⅔" Plumbicon* or Saticon** pickup tubes coupled to advanced Ikegami circuitry that delivers usable pictures in low light with up to 18 dB of gain. Automatic white balance corrects colorimetry over a wide color temperature range with the touch of a single button—there's no need to fumble with filters. The HL-83 is ready to go when you are—where you are. Simple to set up. Simple to operate. Get set for the action in the standby mode and the camera's up and air-ready in less than two seconds when you hit the switch. And you can keep on shooting for up to 3 hours with an on-board 4 lb. Nicad battery.



The HL-83 can easily adapt to your changing needs. For ENG there's direct interface to existing ¾-inch VCR's. And with adaptor, there's interface to either on-board or hip-mounted component recording ½-inch high-speed VCR's.

For EFP it can be connected to a full feature remote control unit through 150 meters of multicore cable with individual RGB as well as encoded outputs.

For sports it's part of the ML-83 Microlink system for complete remote control and transmission for wireless operations.

And the HL-83 is ready for other advances as they become available. It's Ikegami's way of outmoding obsolescence.

Put the HL-83 on your shoulder. You'll be amazed at how little it weighs. How well it handles. And how much picture it delivers. It's the compact top performer with a very bright future. Contact Ikegami for full details.

Ikegami HL-83

*Registered trademark of N.V. Philips
**Registered trademark of NHK

Circle 159 on Reader Service Card

www.americanradiohistory.com

FOSTEX CORP. OF AMERICA ★
15431 Blackburn Ave., Norwalk, CA 90650
213 921-1112
Mic mixers, portable & TV audio consoles; 2-, 4-track & multitrack ATRs, time delay decks; parametric & graphic equalizers; analog special effects, reverb; noise reduction; monitor speakers.

FOSTEX, INTERLAKE DIV. ★
322 Weed Ave. Stamford, CT
203 964-1601
Mic mixers, portable audio consoles; ATRs; digital delaylines, graphic equalizers, noise reduction systems; power amps; headphones; dynamic mics.

FOTO-KEM INDUSTRIES ★
2800 W. Olive Ave., Burbank, CA 91505
213 846-3101
Film-to-tape transfers; videotape duplications.

FREELAND PRODUCTS CO. ★
Rt. 7 Box 628, Covington, LA 70433
504 893-1243
Vacuum tubes.

FREQUENCY DEVICES, INC.
25 Locust St. Haverhill, MA 08130
617 374-0761
Equalizers & filters, audio noise reduction systems; amp power supplies; audio tone test signal generators.

Behind every great camera is a great battery

JVC's New KY-2700PS Camera

The JVC new KY-2700PS combines technology and economy in a 3 tube saticon camera that stands alone in the marketplace. With an impressive list of performance features including high sensitivity and resolution, lightweight (17 lbs. w/lens and viewfinder) handling, needle-sharp picture quality, a remote control unit for adaptation to any field or studio situation, plus a very economical price, it's easy to see why people in the know are calling JVC's KY-2700PS a great camera and a great value.

So it made sense that when JVC went looking for a battery good enough for its portable camera, they came to Anton/Bauer.

A great camera, like the JVC KY-2700PS, deserves a great battery. The battery JVC selected as standard equipment on their

portable camera is an Anton/Bauer Snap-On™, the same battery selected by every major camera manufacturer.

The engineers who designed the JVC KY-2700PS demanded the best power source available. Keep a great battery behind your great camera. Ask for Anton/Bauer.

Anton/Bauer: The Source of Power

anton bauer

ANTON/BAUER, INC. One Controls Drive, Shelton, CT 06484 (203) 929-1100

Circle 160 on Reader Service Card

FREZZOLINI ELECTRONICS, INC. ★
7 Valley St., Hawthorne, NJ 07506
201 427-1160
Lamps, quartz lighting fixtures, lighting stands & rigging, diffusion & efx material; nicad batteries & chargers, inverters & converters. Equipment rental service; engineering consultant.
SEE AD PG. 111

FUJINON, INC. ★
672 White Plains Rd., Scarsdale, NY 10583
914 472-9800
Camera lenses, extenders.
SEE AD PG. 119
Field Offices:
CA Savarona Way, Carson City 90746 ..... 213 532-2861
CA 4855 Atherton Ave., San Jose 95130 ..... 408 866-5466
TX 1710 Brighton, Carrollton 75007 ..... 214 492-7422

FUJI PHOTO FILM USA, INC. ★
350 Fifth Ave., New York, NY 10118
212 736-3335
Audio cassettes; two-inch, one-inch, ¾-inch & half-inch videotape; video head cleaners.
SEE AD PG. 173
Field Offices:
CA S.P. Henderson, 1211 E. Artesia Blvd. 90746 ..... 213 636-0101
GA Jerry Lester, 3300 Buckeye Rd., Atlanta 30341 ..... 404 451-0886
IL John Walsh, 1000 Pratt Blvd., Elk Grove 60007 ..... 312 569-3500
NY Bob Kuczik, 350 Fifth Ave., New York 10118 ..... 212 736-3335
TX Stan Risetter, 3500 Garden Brook Dr., Dallas 75234 ..... 214 243-2537

GABRIEL ELECTRONICS, INC.
Box 610, Scarborough, ME 04074
207 883-5161
Receive only satellite earth stations; microwave, waveguide STLs; microwave & satellite dish antennas; solid core & foam dielectric transmission line.

GAGNON LAFOREST, INC. ★
930 Wellington, Montreal, Canada H3C 1V1
514 861-6768
Scenery rigging.

★ MEANS IT'S VERIFIED

GARDINER COMMUNICATIONS CORP.
3605 Security St., Garland, TX 75042
214 348-4747
Receive only satellite earth stations; LNAs, receivers, switchers.

GARNER INDUSTRIES ★
4200 N. 48 St., Lincoln, NE 68504
402 464-5911
Audio tape duplicators; bulk erasers for audio & videotape.

GBC CLOSED CIRCUIT TV CORP.
315 Hudson St., New York, NY 10013
212 989-4433
Monochrome cameras, lenses, lens extenders, monochrome monitors for CCTV.

www.americanradiohistory.com

GBH PRODUCTION SERVICES ★
125 Western Ave., Boston, MA 02134
617 492-2777
Studio & mobile teleproduction facilities; video post-production facility.

GENERAL ELECTRIC CO. LIGHTING BUSINESS GROUP ★
Nela Park, Cleveland, OH 44112
216 266-2092
Incandescent & quartz stage/studio lamps.

GENERAL ELECTRIC CO., VIDEO DISPLAY EQUIPMENT ★
Electronics Park 6-206, Syracuse, NY 13221
315 456-2152
Video projectors.
SEE AD PG. 214

GENERAL TELEVISION NETWORK
13225 Capital Ave., Oak Park, MI 48237
313 548-2500
Equipment rental service; audio & video post-production facilities; recording studio; stage, studio rentals; facility turnkey installations; engineering consultant; studio, set design; earth station site selection; mobile vehicle construction.

GENERIC COMPUTER SYSTEMS
Box 151, Butler, PA 16001
412 283-1500
Radio business automation hardware; facility turnkey installations; financial services; automatic traffic/billing.

GERSTENSLAGER CO. ★
1425 E. Bowman St., Wooster, OH 44691
216 262-2015
Mobile vehicle construction.
SEE AD PG. 121

GF BUSINESS EQUIP. EMCOR PRODS.
1600 Fourth Ave. NW, Rochester, MN 55901
507 289-3371
Studio consoles. 19-inch equipment racks.

GKM MFG. CORP.
57 Bridgewater St., Brooklyn, NY 11222
212 388-4114
19-inch equipment racks.

GLENTRONIX (1977), LTD. ★
160 Duncan Mill Rd., Don Mills, Ont.
M3B 1Z5, Canada
416 444-8497
Exclusive Canadian distributor of: Ross video switchers and special effects systems; Dynatech jackfields; Telcom Research time code generators, readers & synchronizers; Porta-Pattern test charts; CMC Technology head rebuilding program; Scientel sideband analyzers; Torpey clocks & timing systems.

GLOBAL COMMUNICATIONS & ENGINEERING
914 White Plains Rd., Trumbull, CT 06611
Facility turnkey installation; radio & TV studio design.

GLOBAL SPECIALTIES CORP.
70 Fulton Terrace, New Haven, CT 06509
203 624-3103
RF frequency counter; audio function generator; scope multiplexers.

G&M POWER PRODUCTS ★
6362 Santa Monica Blvd., Los Angeles, CA 90038
213 465-8236
Nicad & lead-acid batteries, chargers; ac power dividers; inverters, converters; monitoring devices, analyzers, condition monitors.

GOLDEN WEST VIDEOTAPE ★
5800 Sunset Blvd., Box 500, Las Angeles, CA 90028
213 460-5866
Studio & mobile teleproduction facilities; video post-production facility.

ALAN GORDON ENTERPRISES, INC. ★
1430 N. Cahuenga Blvd., Hollywood, CA 90028
213 466-3561
Distributor of cine production equipment: tripods; Swintek RF mics; director's viewfinder; NCE animation motors; film projectors; portable lighting; Elemack dollies. Supergrip camera support equipment.
SEE AD PG. 192

GORMAN-REDLICH MFG. CO. ★
6 Curtis St., Athens, OH 45701
614 593-3150
EBS two-tone systems; weather radios; antenna monitors; phase meters.

OVER ONE MILLION FEET!
AND STILL GOING STRONG!
OVER ONE MILLION FEET OF COMMUNICATIONS TOWER CONSTRUCTION ...WE'VE DONE IT!
This represents a tremendous financial investment by our customers, demonstrating their solid confidence in STAINLESS.
To our TV, AM/FM, CATV, military and microwave customers worldwide, past and present...THANKS for your confidence and your business.
NOW ON TO THE NEXT MILLION FEET, and a chance to serve YOU.
Call us soon, and discover what a difference our one million feet of experience can make to YOU!
The Tower People
Stainless, inc.
North Wales, PA 19454 U.S.A.
Phone: (215) 699-4871
TWX: 510-661-8097
CO182
Circle 161 on Reader Service Card

www.americanradiohistory.com

GOTHAM AUDIO CORP.
741 Washington St., New York, NY 10014
212 741-7411
Importer of portable consoles, mono, stereo & TV audio consoles; portable ATRs, 2,4-track & multitrack studio ATRs; turntables, pickup arms, phono cartridges, complete disc consoles; AM & FM compressor/limiters, digital delay & reverb, analog special effects & reverb, mechanical reverb, audio noise reduction; monitor speakers; electret/condenser & shotgun mics & mic supports; PPM & LED audio level indicators, video monitor display meters; wow & flutter meters.

GRAHAM-PATTEN SYSTEMS, INC. ★
Box 1960, Grass Valley, CA 95945
916 273-8412
Audio DAs. Title keyers, downstream keyers; video signal, cable equalizers; video pulse amps, DAs, SC amps. Facility turnkey installations.
SEE AD PG. 206

THE GRAPHIC EXPRESS CORP. ★
3678 Fourth St., San Diego, CA 92103
714 298-2834
Lighting design; studio, set design; newsgraphic slide service.

GRASIS CORP. ★
Box 1039, Kansas City, MO 64141
816 483-1100
Towers, masts, tower lighting; electronic equipment shelters.

THE GRASS VALLEY GROUP, INC. ★
Box 1114, Grass Valley, CA 95945
916 273-8421
Large studio, compact studio/mobile & automated production switchers, post-production switchers; digital video effects processors, RGB & encoded chromakeyers, title keyers, downstream keyers; manual & automated master control switchers; parallel & serial interface machine control systems; sync, black burst generators; video proc amps, pulse amps, DAs, SC amps; sch phase monitor.

GRAY ENGINEERING LABS, INC. ★
504 W. Chapman Ave., Ste. P, Orange, CA 92668
714 997-4151
SMPTE time code generators, readers; safe title area generators.
SEE AD PG. 200

THE GREAT AMERICAN MARKET ★
Box 178, Woodland Hills, CA 91364
213 883-8182
Lamps, HMI & quartz fixtures, lighting control boards, cyc lighting, lighting projection & special effects.

DAVID GREEN BROADCAST CONSULTANTS CORP.
Box 590, Leesburg, VA 22075
703 777-8660
Production equipment rentals & sales.

GREGG LABORATORIES
1542-A Moulton Pky., Tustin, CA 92680
714 730-1100
Mono & stereo studio audio consoles; phono preamps; ALC & AGC amps, AM & FM compressor/limiters, TV audio processor; telco interface equipment.

GRINNAN FIXTURE CO.
16041 Georgetown St. NE, Minerva, OH 44657
216 862-2323
Facility turnkey installations, engineering consultation, mobile vehicle construction, studio cabinets & furniture.

GROSH SCENIC STUDIOS
4114 Sunset Blvd., Hollywood, CA 90029
213 662-1134
Lighting stands, rigging; modular news & studio sets, scenery construction & rigging.

GROTON COMPUTER, INC. ★
19 Fort Hill Rd., Gratan, CT 06340
203 445-2325
Complete program automation systems, radio business automation hardware.

GROVE VIDEO
16851 Oakmont Ave., Gaithersburg, MD 20877
301 840-5801
Video animation controllers; character generators, character generator/framestores, digital graphics systems, camera/VTR digitizers; digital video effects processors.

GRUBER PRODUCTS CO.
Box 7350, Toledo, OH 43615
419 531-4900
Mobile ENG carts, projection tables.

★ MEANS IT'S VERIFIED

GRUMMAN AEROSPACE CORP. ★
Sunrise Hwy., Great River, NY 11739
516 435-6001
Sync processing with switching; time code generators & readers; VITS remote control monitors; custom routing switchers; digital video frame syncs, color identification; video processing equipment, proc amp; RF test equipment; system research & development; antenna tuning units; 19-inch equipment racks; facility turnkey installation; mobile vehicle construction.
SEE AD PG. 81
Refer to Reps/Distributors section

GRUVER RECORDING & SERVICE CO. ★
Box 16, Perkasie, PA 18944
215 257-4460
Audio cassettes; audio post-production facility & recording studio; music library, syndicated radio programming & tower maintenance.

GTE LENKURT, INC.
1105 County Rd., San Carlos, CA 94070
415 595-3000
Intercity microwave equipment; RF program subcarrier; comm. & monitor receivers; microwave & telco STLs; transmit/receive, receive only satellite earth stations; fiberoptic video transmission systems; CATV transmission equipment.

GTE/SYLVANIA LIGHTING PRODUCTS ★
Sylvania Lighting Center, Danvers, MA 01923
617 777-1900
Quartz lamps.

HALLIKAINEN & FRIENDS, INC. ★
101 Suburban Rd., San Luis Obispo, CA 93401
805 541-0200
TV audio consoles; auto time, weather announcers. Remote control systems. Log printers; automatic transmitter logging & control.

HARDIGG INDUSTRIES, INC. ★
N. Main St., S. Deerfield, MA 01373
413 665-2163
Foam insert & rack configuration transportation cases.

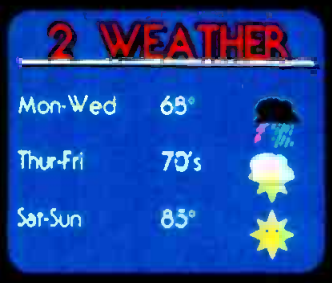
HARRIS CORP., BROADCAST DIV. ★
Box 4290, Quincy, IL 62301
217 222-8200
Mic mixers; portable, stereo & mono studio & automated audio consoles; electronic audio editors; turntables; time insertion sequencers, complete program automation systems, auto time/weather announcers, radio business automation hardware & newsroom computers & word processing. ALC & AGC amps, AM & FM compressor/limiters. Studio, ENG/EFP & lightweight video cameras, solid state cameras; digital still stores; video editor/controllers; TBCs, frame synchronizers, framestores, TBC/framestores. Camera tripods, heads, pedestals, ENG braces, remote pan/tilt systems, helicopter rigs. AM, FM, UHF & VHF transmitters; AM, AM stereo, FM & TV exciters, stereo generators, modulators; transmit/receive, receive only & transportable satellite earth stations; intercity, portable ENG & airborne microwave, central receivers; remote control systems; remote pickup equipment; microwave & satellite STLs; FM & TV SCA equipment; AM, FM & TV (HP & CP) TV antennas; microwave, satellite dish & communications antennas, antenna tuning units; RF phasing network. Modulation monitors. Studio consoles. Engineering consultant; earth station site selection; mobile vehicle construction.
SEE AD PG. 53, 139
Field Offices:
CA 5839 Green Valley Circle, Ste. 200
Culver City, 90230 . . . . . 213 642-0052
NY 675 3rd Ave.,
New York, NY 10017 . . . . 212 986-7600
TX 7000 Regency Square Blvd., Ste. 200
Houston 77036 . . . . . 713 977-2411
CN 3452 Ashby St., Ville St. Laurent,
Quebec H4R 2C1 . . . . . 514 336-0900
CN 19 Lesmill Rd., Don Mills,
Ont. M3B 2T3 . . . . . 416 441-2400

HARRIS CORP., BROADCAST MICROWAVE ★
1680 Boyport Ave., San Carlos, CA 94070
415 595-3500
Intercity, portable ENG & airborne microwave, central receivers; microwave STLs.

HARRIS CORP. SATELLITE COMM. DIV. ★
Box 1700 Melbourne, FL 32901
305 724-3000
Transmit/receive & receive only satellite earth stations.

HARRIS CORP., SATELLITE COMM. DIV., ANTENNA OP. ★
Box 1277, Kilgore, TX 75662
214 984-0555
Transmit/receive, receive only & transportable satellite earth stations.

www.americanradiohistory.com



Keyboard Logo Compose.

Character Reduction.

Left/Right Italics.

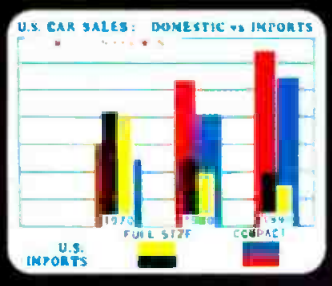
Dual Channel.

Mirror Image.

Character Reversal.

Auto Camera Compose.

Sports Logos.



Business Statistics.

Computer Interface.

Background Figures.

Character Outlining.

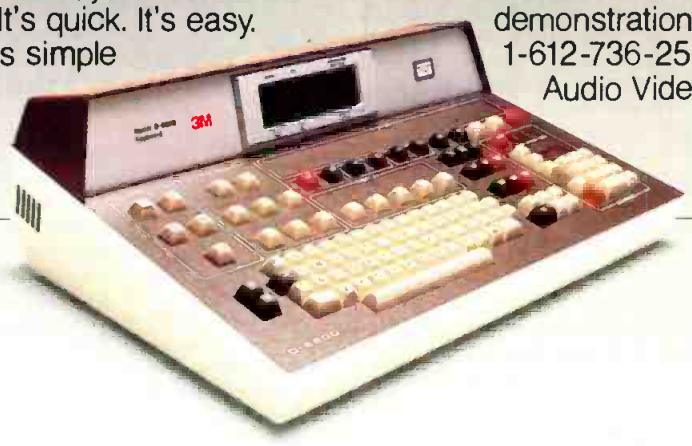
When you own a D-8800, it's easy to show off.

With the 3M D-8800 Graphics Generator, you can do all this and more. It gives you ten roll and crawl speeds. Hundreds of fonts. Eight mask positions. Automatic centering, both horizontally and vertically. Generous storage capabilities. And the dynamics of animation. All without any add-ons.

Yet with all its capabilities, you don't need special training to run it. It's quick. It's easy. The keyboard language is simple English. And our optional System Diagnostics package keeps your maintenance simple, too.

So give your productions the look of the top professionals. Show off with the D-8800.

All photos above are taken from actual TV monitors. If you'd like to see for yourself, call us collect at 1-612-733-8132 for a free demonstration. Outside the U.S., call 1-612-736-2549. Professional Audio Video Equipment/3M.



3M hears you...

3M

www.americanradiohistory.com

HARRIS VIDEO SYSTEMS ★
1255 E. Arques Ave., Sunnyvale, CA 94086
408 737-2100
Digital still stores; video editor/controllers; TBCs, frame synchronizers, TBC/framestores.
SEE AD PG. 69
Field Offices:
AL Robert Ridge, Box 229, Hazel Green 35750 . . . . . 205 828-3508
IA Clay Selthun, 1421 W. 1st St., Pella 50315 . . . . . 515 628-9389
MA Aaron Snyder, 1443 Beacon St., Brookline 22146 . . . . . 617 232-6545

HARRISON SYSTEMS, INC. ★
Box 22964, Nashville, TN 37202
615 834-1184
Portable, mono & stereo studio, automated & audio for TV mixing consoles; complete radio program automation systems; graphic equalizers; VU, PPM, video monitor display & LED audio level indicators.
SEE AD PG. 7
Refer to Reps/Distributors section

HARWOOD MFG. CO.
1800 W. Fullerton, Chicago, IL 60614
312 929-1100
Photographic & electronic lighting equipment; portable lighting.

★ MEANS IT'S VERIFIED

HAWAII PRODUCTION CENTER ★
1534 Kapiolani Blvd., Honolulu, HI 96814
808 944-5200
Studio & mobile teleproduction facilities; video post-production facility.

H.B.O. STUDIOS ★
120-A E. 23 St., New York, NY 10010
212 477-8600
Teleproduction & post-production facilities.

HEATH CO.
Benton Harbor, MI 49022
616 982-3200
Audio preamps, monitor & power amps; LED audio level indicators; frequency monitors, harmonic distortion meters, oscilloscopes, vectorscopes, voltmeters, dB meters; computer systems including digital weather system; video projectors.

HEDCO (HUGHES ELECTRONIC DEVICES CORP.) ★
Box 1985, Grass Valley, CA 95945
916 273-9524
Audio line amps, DAs; audio routing switchers. Parallel & serial interface video routing switchers; video signal, cable equalizers; video pulse amps, DAs & SC amps; return loss bridges; terminations.
SEE AD PG. 190
Refer to Reps/Distributors section

KARL HEITZ, INC. ★
979 Third Ave., New York, NY 10022
212 421-5220
Tripods, heads, dollies; lighting stands & rigging.

HEWLETT-PACKARD CO. ★
1501 Page Mill Rd., Palo Alto, CA 94304
415 857-1501
Automated test & measuring systems; diff. phase/gain measurement; frequency monitors & counters; audio & RF generators; impedance bridges; logic analyzers, modulation monitors, oscilloscopes, phase meters, sideband analyzers, spectrum analyzers, voltmeters, multimeters, dB meters; TV & computer equipment; audio preamps & line amps.

HF SIGNALLING, INC. ★
3101 Mercier, Box 17510, Kansas City, MO 64130
816 931-4448
Audio test signal generators, harmonic distortion meters; voltmeters.

HICKOK ELECTRICAL INSTRUMENTS CO. ★
10514 DuPont Ave., Cleveland, OH 44108
216 541-8060
Video test signal generators; oscilloscopes, multimeters, logic analyzers.

HIPOTRONICS ★
Drawer A, Rt. 22, Brewster, NY 10509
914 279-8091
High-voltage power supplies & test equipment; variable transformers; voltage regulators.
SEE AD PG. 200
Refer to Reps/Distributors section.

HITACHI DENSHI AMERICA, LTD. ★
175 Crossways Park W., Woodbury, NY 11797
516 921-7200
Studio, field, ENG/EFP, lightweight, single-tube, single-piece, b&w & solid state cameras; one-inch C VTRs, pro VHS VCRs; VTR slow-mo controller; telecine cameras; TBCs; monochrome & RGB monitors.
SEE AD PG. 156
Refer to Reps/Distributors section

HM ELECTRONICS, INC. ★
6151 Fairmount Ave., San Diego, CA 92120
714 280-6050
RF intercoms; RF mics.

HOWE AUDIO MARKETING
3085-A Bluff St., Boulder, CO 80301
800 525-7520
Mic mixers; stereo, automated & TV audio consoles; stereo phase corrector; telco interface equipment.

HSC, INC. ★
2211 Oakton St., Unit 10, Arlington Heights, IL 60005
312 956-7280
Studio furniture, studio consoles, 19-inch equipment racks; custom rack-mounting hardware for video equipment. Engineering consultant; mobile vehicle construction.

HUGHES HELICOPTERS, INC. ★
5320 Arizona Circle, Los Angeles, CA 90045
213 305-5000
Broadcast-equipped helicopters.

HUGHES MICROWAVE COMM. PRODUCTS ★
Box 2999, Torrance, Ca 90509
213 517-6233
Receive only satellite earth stations; intercity microwave; microwave STLs; satellite dish antennas.

HUGHEY & PHILLIPS, INC. ★
Box 6729, Burbank, CA 91510
213 849-1104
Tower lighting; transformers.

IDEAL INDUSTRIES, INC.
Becker Pl., Sycamore, IL 60178
815 895-5181
Dimmer packs; lighting, ac cable; connectors, tools.

IGM COMMUNICATIONS ★
4041 Home Rd., Bellingham, WA 98226
206 733-4567
Complete automation systems; time insertion sequencers; computer/microprocessor automation controllers; auto time/weather announcers; audio cart player/recorders; audio distribution equipment.
SEE AD PG. 202

IKEGAMI ELECTRONICS (U.S.A.), INC. ★
37 Brook Ave., Maywood, NJ 07607
201 368-9171
Studio, field, ENG/EFP, single piece & monochrome cameras; CCUs, lenses, pickup tubes, camera accessories; telecine cameras & color connectors; monochrome, NTSC & RGB video monitors.
SEE AD PG. 32,90-91
Field Offices:
CA 3445 Kashiwa St., Torrance 90505 . . . . . 213 534-0050
FL 6201 Johns Rd., Ste. 5, Tampa 33614 . . . . . 813 884-2046
MO 12623 Woody Grove Dr., St. Louis 63141 . . . . . 314 878-6290
TX 330 N. Belt E., Ste. 228, Houston 77060 . . . . . 713 445-0100

IMAGE DEVICES INTERNATIONAL
1825 NE 149 St., Miami, FL 33181
305 945-1111
Video & cine, lighting & grip equipment rentals; camera cranes & generators; underwater cameras & lights; portable audio mixer; cassette player/recorders; electret/condenser mics.

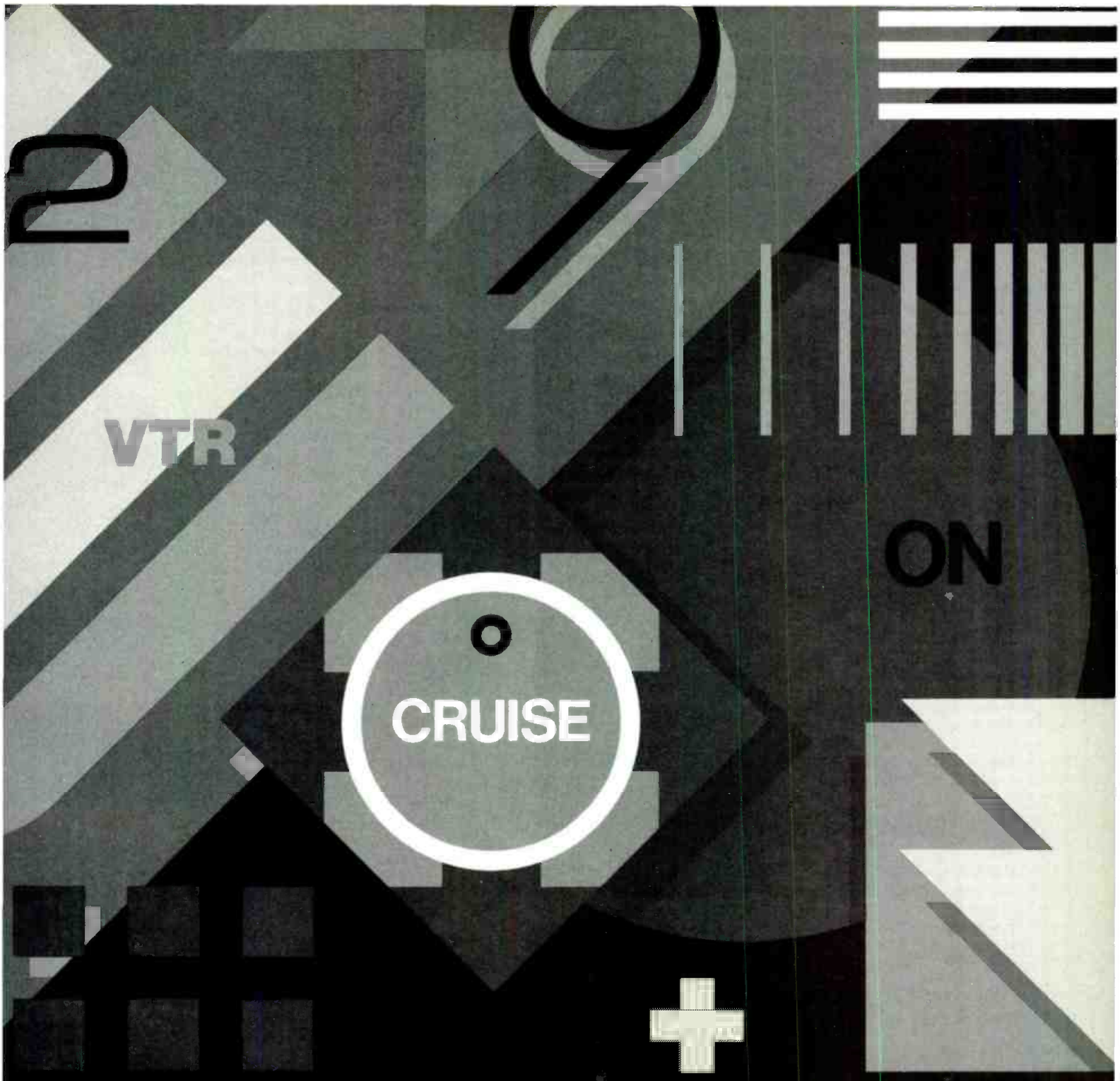
IMAGE MAGNIFICATION, INC. ★
739 Airway Circle, New Smyrna Beach, FL 32069
904 427-5294
Video projectors.

IMAGE RESOURCE CORP. ★
2260 Townsgate Rd., Westlake Village, CA 91361
805 496-3317
Color film recorder (Videoprint).

IMAGE RESOURCES, INC. ★
801 S. Orlando Ave., Winter Park, FL 32789
305 645-4200
Studio & mobile teleproduction facilities; video post-production facility.

IMAGE TRANSFORM, INC. ★
4142 Lankershim Blvd., N. Hollywood, CA 91602
213 985-7566
Video post-production facility; film laboratory; tape-to-film transfers & standards conversions.

www.americanradiohistory.com



Modern art.

The science of video production is certainly modern art. There is no better example of the human ability to combine imagination with technology and experience to change the way we communicate.

Convergence Corporation is an integral part of the video revolution. We make the best video editing systems money can buy. And yet, it's surprising how little it costs to own the best.

But there's something about Convergence editing systems that's even more important than quality and price. And that's the way they perform. They're designed to be operated by people – not computers. They don't get in the way of the creative process, but actually make it easier to combine skill and imagination to produce a finished product that's a thing of beauty.

Convergence Corporation. The modern art of video editing systems.

CONVERGENCE CORPORATION

1641 McGaw, Irvine, CA 92714 Tel: (714) 549-3146. Tlx: (910) 595-2573 • 250 W. 57th Street, Fisk Building, Suite 815, New York City, NY 10019 • 1 Lochaline Street, London W6 9SJ U.K. Tel: 01-741 7211, Tlx: 851-27950 MONREF G

Circle 162 on Reader Service Card

www.americanradiohistory.com

We stand out from the crowd.

Thanks to the unique design of the patented Beau pancake motor, our Type 100 Recorder/Reproducer gives you *space* economy (it's only 3 5/8" high and stackable) and *power* economy, too. Also cool-running and compact, there's the inexpensive Beaucart II Reproducer.

Simple design means greater efficiency. Our versatile Model SFE-1 Automatic Splice Finder and Bulk Eraser combines *two* machines in *one*.

A common-sense approach makes Beau-Master Stereo Console and its companion Beau-Pro easy to operate—with the performance you demand.

Simple functional design makes UMC stand out from the crowd.

UMC Electronics Company
460 Sackett Point Road
North Haven, Connecticut 06473
Phone (203) 288-7731

UMC®

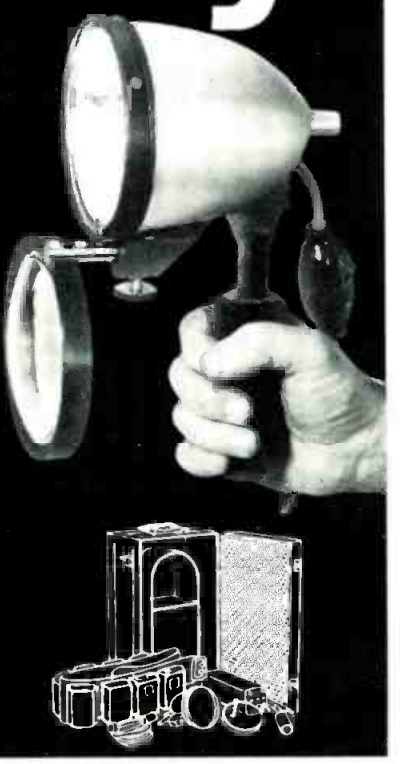
Outside Connecticut, toll free, (800) 243-6178

Circle 163 on Reader Service Card

CINE 60 SUN-GUN

Beautifully Simple

Beautiful . . . because it's fresnel-soft and uniform — ideal for video. And simple because . . . if 250 Watts is too much, change to 150 Watts. Need more? Go to 350 Watts. Want to go really light? Use 100 Watts (12V.). Outdoors, swing-in the built-on Daylight Filter. You color correct instantly! Indoors, swing away the Filter and you have tungsten light! Never a need to readjust camera color controls here! For focus, vary the beam from 8 to 14 Ft. For power, choose from 20 Sun-Gun Powerbelts and Powerpaks. And, to make it beautifully simple . . . we put it all together for you in any one of 17 Portable Sun-Gun Kits. See your dealer or send for data, today.



CINE 60
INCORPORATED

630 Ninth Ave.
New York, N.Y. 10036
(212) 586-8782

6430 Sunset Blvd.
Hollywood, C.A. 90028
(213) 461-3046

See Us at Booth 213-214 SMPTE Conference, NY Hilton

Circle 164 on Reader Service Card

MANUFACTURERS

IMAGE VIDEO ★
705 Progress Ave., Unit 46, Scarborough, Ont. M1H 2X1, Canada
416 438-3940
Manual, automated & business automation interfaced master control switchers; parallel & serial interface routing switchers; parallel & serial interface machine control; video DAs.

INDUSTRIAL RESEARCH PRODUCTS, INC. ★
321 N. Bond St., Elk Grove Village, IL 60004
312 439-3600
Digital audio special effects; audio/video sync delay; automatic mic mixers.

INDUSTRIAL SCIENCES, INC. ★
3521 SW 42 Ave., Box 1495, Gainesville, FL 32608
800 874-7590
Portable, large studio, compact studio/mobile & automated video production switchers; post-production switchers; standalone effects generators; RGB & encoded chromakeyers, downstream keyers; manual & automated master control switchers; parallel & serial interface routing switchers; sync, black burst & color bar generators; video proc amps, pulse amps, DAs, SC amps; telecine light control. Mono audio mixing consoles.
SEE AD PG. 160

★ MEANS IT'S VERIFIED

INFLIGHT SERVICES, INC. ★
485 Madison Ave., New York, NY 10022
212 751-1800
Large-screen video projection system.

INFORMATION PROCESSING SYSTEMS OF CALIFORNIA, INC.
70 Glenn Way, Ste. 2, Belmont, CA 94002
415 592-1742
TV weather satellite recorders; color graphics system.

INMARK CORP. ★
147 W. Cedar St., Norwalk, CT 06854
203 866-8474
High vacuum capacitors.

INNOVATIVE TELEVISION EQUIPMENT (ITE) ★
Box 681, Woodland Hills, CA 91365
213 888-9421
Camera heads, tripods, dollies, ENG braces, pedestals; microwave support & portable equipment.

INOVONICS, INC. ★
503-B Vandell Way, Campbell, CA 95008
408 374-8300
Audio recorder replacement electronics, ATR tape tension servo kit; ALC & AGC amps, AM & FM compressor/limiters; noise reduction systems; PPM meters. Spectrum analyzers.
SEE AD PG. 110

www.americanradiohistory.com

INSTANT REPLAY VIDEO PRODUCTIONS ★
1349 E. McMillan St., Cincinnati, OH 45206
513 861-7065
Teleproduction facility; video post-production facility.

INTEGRATED SOUND SYSTEMS ★
29-50 Northern Blvd., Long Island City, NY 11101
212 729-8400
Time compression/expansion; graphic equalizers; stereo audio consoles; turntables & complete disc consoles; monitor speakers; dynamic, electret/condenser & shotgun mics; monitor & power amps.

INTERACTIVE SYSTEMS CO. ★
2425 6 St., Boulder, CO 80302
303 443-0305
SMPTE & proprietary time code generators, readers & synchronizers.

INTERAND CORP. ★
666 N. Lake Shore Dr., Suite 1100, Chicago, IL 60611
312 943-1200
Video animation controller; digital art/paint systems, bit pad digitizers, weather symbol inserter, "draw-on-screen" systems; digital effects processors, standalone effects generators, colorizers.

INTERFACE DATA SYSTEMS, INC. ★
2990 E. La Jolla St., Anaheim, CA 92806
714 630-8030
Complete program automation systems, time insertion sequencers, computer automation controllers, radio business automation hardware, radio newsroom computers.

INTERFACE ELECTRONICS
6710 Alder, Houston, TX 77081
713 660-0100
Portable audio consoles.

INTERFACE VIDEO SYSTEMS, INC. ★
1333 New Hampshire Ave. NW, Washington, DC
202 861-0500
Teleproduction & post-production facilities.

INTERNATIONAL ELECTRO-MAGNETICS ★
350 N. Eric Dr., Palatine, IL 60067
312 358-4622
Replacement & rebuilt audio & video heads; graphic equalizers.

INTERNATIONAL INSTRUMENTS, DIV. SIGMA ★
88 Marsh Hill Rd., Orange, CT 06477
203 795-4711
Voltmeters, dB meters.

INTERNATIONAL MICROWAVE CORP.
33 River Rd., Cos Cob, CT 06807
203 661-6277
Intercity, portable & ENG microwave equipment; RF program subcarrier, RF amps; microwave STLs; AM & FM transmitters.

INTERNATIONAL NUCLEAR CORP.
608 Norris Ave., Nashville, TN 37204
615 254-3365
Audio preamps, line, monitor & power amps, amp power supplies; audio DAs; EBS two-tone systems. Portable, large studio, compact studio/mobile & automated production switchers; post-production switchers; standalone video effects generators, colorizers, RGB & encoded chroma-keyers, downstream keyers; manual & automated master control switchers; parallel & serial interface routing switchers; black burst generators; video signal, cable equalizers; video proc amps, pulse amps, DAs, SC amps.

INTERNATIONAL PRODUCTION CENTER ★
514 W. 57 St., New York, NY 10019
800 223-0622
Teleproduction facility; video post-production facility.

INTERNATIONAL TAPETRONICS CORP./3M ★
2425 S. Main St., Bloomington, IL 61701
309 828-1381
Single-deck, dual/triple-deck & time delay audio cart player/recorders; 2,4-track studio ATRs; audio carts.
SEE AD PG. 77

ITI ELECTRONICS, INC. ★
369 Lexington Ave., Clifton, NJ 07011
201 546-3900
Audio preamps, line, monitor & power amps, amp power supplies.

ITT JENNINGS ★
970 McLaughlin Ave., San Jose, CA 95122
408 292-4025
RF switches; voltmeters.

IVIE ELECTRONICS ★
500 W. 1200 South, Orem, UT 84057
801 224-1800
Graphic equalizers, digital audio delay & reverb; audio preamps, monitor & power amps. Audio test signal generators, spectrum analyzers.

JAM CREATIVE PRODUCTIONS, INC. ★
4631 Insurance Ln., Dallas, TX 75205
214 526-7080
Recording studio; music library; station ID jingle packages.

JAMIESON & ASSOC., INC. ★
4130 IDS Tower, Minneapolis, MN 55402
612 333-4581
Radio & TV station design; facility turnkey installations; engineering consultant; studio, set design.

THE JANSON INDUSTRIES ★
1200 Garfield Ave., SW, Canton, OH 44706
216 455-7029
Scenery construction; scenery & rigging, props & materials; cycloramas.

JATEX, INC. ★
2626 Freewood Dr., Dallas, TX 75220
214 358-0200
Video & audio editing systems; SMPTE and proprietary time code generators & readers.

JAVELIN ELECTRONICS, INC.
19831 Magellan Dr., Torrance, CA 90502
213 327-7440
Monochrome video cameras; camera lenses & extenders; monochrome picture monitors; video DAs; remote pan & tilt systems; time lapse video action recorders; video source ID systems; modulators.

The Lowel Omni and Lowel Tota lights have very different personalities. But they complement each other so brilliantly that they even share many of the same components. Every Tota accessory functions equally well with the Omni-light. As a result, you will have less equipment to purchase, less to lug on location, and more lighting options when you get there. In addition to seven Tota and Omni-light kits, we have four combined Tota/Omni kits or, you can create your own unique kit. These uncommon lights, and kits, share something else in common—countless professionals who ♥ them. For information on equipment, kits and authorized dealers, contact Lowel-Light Manufacturing, Inc. 475 Tenth Ave. New York, N.Y. 10018. 212-947-0950. Or Lowel West, 3407 West Olive Ave. Burbank, California 91505. 213-846-7740.

lowel®

Circle 165 on Reader Service Card

www.americanradiohistory.com

JEFFERSON DATA SYSTEMS ★
Executive Plaza, 501 Archdale Dr., Charlotte, NC 28210
704 525-3901
Business data systems for radio & TV; newsroom computers.

JEFFERSON PRODUCTIONS ★
1 Julian Price Pl., Charlotte, NC 28208
704 374-3823
Studio & mobile teleproduction facilities; video post-production facility.

JENEL CONSULTANTS CORP.
9550 Forest Ln., Ste. 400, Dallas, TX 75243
214 343-1229
Complete radio program automation systems. Jackfields, patch panels; hum bucking coils. Facility turnkey installations; engineering consultant; mobile vehicle construction.

JENSEN TOOLS, INC.
7815 S. 46 St., Phoenix, AZ 85040
602 968-6241
Tools.

JENSEN TRANSFORMERS ★
10735 Burbank Blvd., N. Hollywood, CA 91601
213 876-0059
Transformers.

★ MEANS IT'S VERIFIED

JOHNSON ELECTRONICS, INC. ★
62 S. Highways 17-92, Casselberry, FL 32707
305 339-2111
EBS two-tone systems. FM & TV SCA equipment; FM antennas.

E.M. JOHNSON & ASSOC., INC. ★
1 Regency Sq., Ste. 450, Knoxville, TN 37915
615 521-6464
Engineering consultant.

JONES TELEVISION PRODUCTION, INC. ★
517 Chester St., Little Rock, AR 72201
501 372-4285
Studio & mobile teleproduction facilities; video post-production facility.

JRF CO., INC. ★
101 Landing Rd., Landing, NJ 07850
201 398-7426
Replacement & rebuilt audio heads.

J.S.L. VIDEO SERVICES, INC. ★
25 W. 45 St., New York, NY 10036
212 575-5802
Video post-production facility.

JVC CO. OF AMERICA ★
41 Slater Dr., Elmwood Park, NJ 07407
201 794-3900
ENG/EFP, lightweight & single-tube video cameras; camera lenses & extenders; U-type & pro VHS VCRs; compact production switchers; editor/controllers, SMPTE time code generators & readers; NTSC, RGB & dc portable video monitors. Nicad batteries & chargers.
SEE AD PG. 85

KAHN COMMUNICATIONS, INC. ★
839 Stewart Ave., Garden City, NY 11530
516 222-2221
Audio line amps; AM stereo exciters; low frequency extenders; AM compressor/limiters; stereo generators.

KAITRONICS CORP. ★
1540 Gilbreth Rd., Burlingame, CA 94010
415 697-9102
Studio & portable production switchers; parallel & serial interface routing switchers; parallel interface machine control; SMPTE time code generators & readers; color bar generators.

KALAMUSIC ★
151 S. Rose St., Suite 600, Kalamazoo, MI 49007
616 385-5110
Syndicated radio programming.

KALART VICTOR CORP. ★
Hultenius St., Plainville, CT 06062
203 747-1663
Audio editing, splicing, rewinding equipment; 16/35 mm telecine projectors, optical multiplexers.

KAMAN SCIENCES/ KAMAN BROADCASTING SYS. ★
Box 7463, 1500 Garden of the Gods Rd., Colorado Springs, CO 80933
303 599-1601
Radio & TV newsroom computers; business & program automation equipment.

KANSAS PUBLIC TELECOMMUNICATIONS, INC.
320 W. 21 St., Wichita, KS 67203
316 838-3090
Audio & video post-production facilities; recording studio; video/film production.

KAPPA NETWORKS, INC.
165 Roosevelt Ave., Carteret, NJ 07008
201 541-1600
Phasing networks; delay lines; RF inductors & transformers; engineering consultation.

KARTES VIDEO COMMUNICATIONS, INC. ★
10 E. 106 St., Indianapolis, IN 46280
317 844-7403
Studio & mobile teleproduction facilities; video post-production facility.

KAVCO, INC. ★
3931 Image Dr., Dayton, OH 45414
513 898-2003
Parallel & serial interface machine control systems; mobile vehicle construction; facility turnkey installations & engineering consultation.

KAVOURAS, INC. ★
6301 34 Ave. S., Minneapolis, MN 55450
612 726-9515
Weather radar systems & information services.

KAY ELEMETRICS CORP. ★
12 Maple Ave., Pine Brook, NJ 07058
201 227-2000
RF test signal generators; spectrum analyzers.

KB SYSTEMS
10407 62 Pl. W., Everett, WA 98204
206 355-8740
Film editing equipment; sprocketed film transports; digital clocks & timers.

K&H PRODUCTS, LTD. ★
Box 246 N. Bennington, VT 05257
802 442-9118
ENG camera braces, ENG equipment carts; carrying cases.

KHJ-TV
5515 Melrose Ave., Hollywood, CA 90038
213 467-5459
Studio & mobile teleproduction facilities; video post-production facility.

KILOVAC CORP., DOW-KEY DIV. ★
Box 4422, Santa Borbara, CA 93103
805 684-4560
RF switches.

KINGS ELECTRONICS ★
40 Marbledale Rd., Tuckahoe, NY 10707
914 793-5000
Patch panels, coaxial & triaxial connectors.

KITCHEN PRODUCTIONS
619 W. Ridgecrest Blvd., Ridgecrest, CA 93555
714 375-2753
LPTV switching equipment; turnkey installations, engineering consultation & earth station site selection.

KLARK-TEKNIK ELECTRONICS, INC. ★
262A Eastern Pkwy., Farmingdale, NY 11735
516 249-3660
Graphic equalizers; digital & analog audio special effects, mechanical reverb; spectrum analyzers.

KLIEGL BROS. ★
32-32 48 Ave., Long Island City, NY 11101
212 786-7474
Lighting control boards; quartz fixtures, lighting stands; cyc lighting.

KLINE IRON & STEEL CO., INC.
Box 1013, Columbia, SC 29202
803 779-7080
Tower masts, hardware & construction equipment.

KNOX VIDEO PRODUCTS ★
5001-J Forbes Blvd., Lanham, MD 20706
301 459-2106
Character generators, colorizers; video proc. amps & DAs.

KOSS CORP.
4129 N. Port Washington St., Milwaukee, WI 53212
414 964-5000
Dynamic & electrostatic headphones, speakers; digital delay systems.

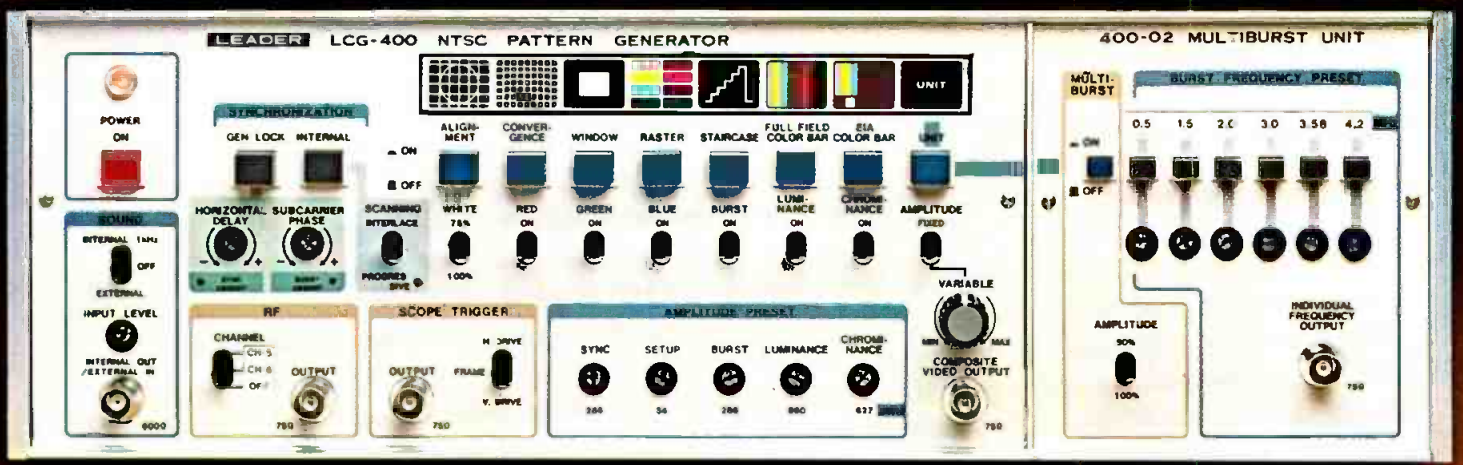
KOZIN INTERNATIONAL ★
836 Greenwood Ct., Carpentersville, IL 60110
312 428-2495
Audio cassettes, carts, reels; leader tape.

KQED PRODUCTIONS ★
500 8 St., San Francisco, CA 94103
415 553-2137
Studio & mobile teleproduction facilities; video post-production facility.

www.americanradiohistory.com

The Leader Sync/Test Generators.

Every important feature for under $2,000.*

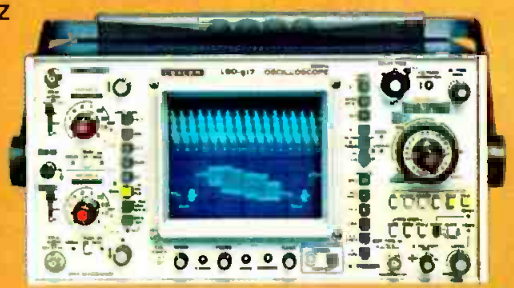


Precise NTSC sync/test pattern generators.

Leader's LCG-400 series sync/test generators provide accurate reference signals for any off-the-air broadcast or non-broadcast operation. Available in either multi-burst or sweep marker configurations, the LCG-400 provides EIA and full-field color bars as well as staircase, raster (in eight colors), window, convergence and cross-hatch test signals...plus gen-lock capabilities and a host of auxiliary outputs. As a matter of fact, Leader's sync/test generators do virtually everything the $4,000 generators do... except cost as much.

A network-proven 50 MHz oscilloscope.

The Leader LBO-517 oscilloscope makes accurate and detailed measurements. It offers sensitivities of 1 mV to 10 MHz and 5 mV to 50 MHz. Two main and two auxilliary channels can be displayed on main and delayed time bases (8 traces) simultaneously while intensifying the delayed portion. Composite triggering provides *stable* viewing of two asynchronous inputs. Positive, stable triggering on composite video signals, at either H or V rates, is automatic. Leader's new dome-mesh 20 kV CRT assures bright, clearly defined displays, even at the highest or lowest sweep rates. All for under $2,000.



LBO-517 50 MHz Oscilloscope. $1695.*

LVS-5850 NTSC Vectorscope. $2050.*

The Leader Vectorscope is unique.

Only the Leader LVS-5850 NTSC Vectorscope offers CRT-generated phase/amplitude targets that are as bright and clear as the vectors themselves. Now you can easily verify NTSC Vectors in darkened control rooms. And, electronically generating the targets eliminates non-linearity errors caused by CRT aging. You can mount it in your existing console, view it from any angle or distance, and be confident that what you see is what you've got.

Two-year warranty. Evaluation units.

A history of high reliability permits Leader to provide a generous two-year warranty (even on the CRT)...backed by factory service depots on the East and West Coasts. Evaluation units are available to all qualified customers. **Call toll-free (800) 645-5104 to request:** an evaluation unit, our 1981/82 catalog, the name of your nearest "Select" distributor and additional information.

For video engineers who know the difference.

LEADER Instruments Corporation

380 Oser Avenue
Hauppauge, N.Y. 11788 (516) 231-6900
Regional Offices:
Chicago, Los Angeles, Dallas.

*Mfg. Suggested List Price

Circle 158 on Reader Service Card

www.americanradiohistory.com

KTVY ★
Box 14068, Oklahoma City, OK 73113
405 478-1212
Studio & mobile teleproduction facilities; video post-production facility.

KVIE VIDEO ★
Box 6, Sacramento, CA 95801
916 929-5843
Studio & mobile teleproduction facilities; video post-production facility.

LAIRD TELEMEDIA ★
2424 S. 2570 West, Salt Lake City, UT 84119
801 972-5900
16/35mm telecine projectors, optical multiplexers; character generators.

LAKE SYSTEMS CORP. ★
55 Chapel St., Newtan, MA 02160
617 244-6881
Video cart automation system.
SEE AD PG. 187
Refer to Reps/Distributors section

LANDY ASSOCIATES, INC.
1890 E. Marlton Pike, Cherry Hill, NJ 08003
609 424-4660
Equipment rental service; facility turnkey installations; engineering consultant; service & repair.

LANG VIDEO SYSTEMS CORP. ★
700 Warrington Ave., Redwood City, CA 94063
415 364-1287
Video SID systems; video DAs; ENG switchers.

JAMES B. LANSING SOUND, INC. (JBL) ★
8500 Bolboa Blvd., Northridge, CA 91329
213 893-8411
Audio line, monitor & power amps; monitor speakers; electronic crossover units.
SEE AD PG. 203
Field Office:
MI Tom Roseberry
3040 Charlevoix Dr. SE. #101
Grand Rapids 49506 . . . . . 616 455-6270
Refer to Reps/Distributors Section

LARCAN COMMUNICATIONS EQUIPMENT, INC. ★
396 Attwell Dr., Rexdale, Ont. M9W 5C3, Canada
416 675-7517
FM, UHF & VHF transmitters, translators; RF amplifiers, FM & TV exciters, diplexers; TV HP antennas; facility turnkey installations.

LAUDERDALE ELECTRONIC LABS
16 SW 13 St., Ft. Lauderdale, FL 33315
305 764-7755
Audio alignment, tension gauges; bulk audio & video erasers, tape cleaners & evaluators; splicing blocks & tape; record cleaning, care; mic stands, booms & dollies; audio preamps, DAs; video head cleaners, degaussers.

LEADER BROADCAST SYSTEMS, INC. ★
835 W. 7th Ave. Vancauver, BC V5Z 1C2 Canada
604 873-4771
Portable, 2,4-track, multitrack & time delay ATRs; audio cassette player/recorders; Soldor sprocketed magnetic film transports; replacement & rebuilt heads, head degaussers, alignment & tension gauges; Elector SMPTE time code synchronizers, VU & PPM meters; Milab dynamic, electret/condenser, ribbon, RF, shotgun, lavalier & capsular mics, mic stands, booms & dollies. Distributor of full line of other audio equipment.
SEE AD PG. 176

LEADER INSTRUMENTS CORP. ★
380 Oser Ave., Hauppauge, NY 11788
516 231-6900
DC power supplies; TV field intensity meters, RF power meters & wattmeters, RF test signal generators, impedance bridges, frequency counters; harmonic distortion meters, wow & flutter meters; video test signal generators, waveform monitors, vectorscopes; oscilloscopes, delayed sweep scopes, voltmeters, multimeters, dB meters.
SEE AD PG. 101

LEAR SIEGLER, INC., BOGEN DIV.
Box 500, Paramus, NJ 07652
201 343-5700
Audio preamps, line, monitor & power amps; compressor/limiters; graphic equalizers; hardwired intercoms.

★ MEANS IT'S VERIFIED

LEASAMETRIC, INC. ★
1164 Tritan Dr., Faster City, CA 94404
800 447-4700
Test equipment rentals.
SEE AD PG. 148
Field Offices:
CA 2100 E. Katella,
Anaheim 92803 . . . . . 714 634-9525
CA 5770 Uplander Way,
Culver City 90230 . . . . . 213 670-0461
CA 1155 Triton Dr.,
Foster City 94404 . . . . . 415 574-5797
CO 7338 S. Alton Way,
Englewood 80112 . . . . . 303 741-4900
GA 6320 McDonough Dr.,
Norcross 30093 . . . . . 404 449-6123
IL 755 Route 83,
Bensenville 60106. . . . . 312 595-2700
MA 400 W. Cummings Park,
Woburn 01801 . . . . . 617 935-7780
MD 9246 Gaither Rd.,
Gaithersburg 20877. . . . . 301 948-9700
NJ 6 Pearl Court,
Allendale 07401 . . . . . 201 825-9000
NY #3 Northern Concourse.
N. Syracuse 13212 . . . . . 315 455-5611
OH 6500 Poe Ave.,
Dayton 45414 . . . . . 513 898-1707
PA 701 Ashland Ave..
Folcroft 19032. . . . . 215 583-2000
TX 720 N. Post Oak Rd..
Houston 77024 . . . . . 713 682-8920
VA 1 Koger Exec. Center,
Norfolk 23501 . . . . . 804 627-4411
WA 2865 152 Ave. N.E.,
Redmond 98052 . . . . . 206 883-6510

LEBLANC & ROYLE COMMUNICATIONS, INC.
514 Chartwell Rd., Box 880, Oakville, Ont. L6J 5C5, Canada
416 844-1242
AM antennas; towers & masts, tower hardware & construction equipment, tower lighting.

LECTROTECH, INC.
5810 N. Western Ave., Chicago, IL 60659
312 769-6262
Color picture monitors; oscilloscopes, vectorscopes, frequency monitors & counters.

LEE LIGHTING AMERICA, LTD. ★
534 W. 25 St., New York, NY 10001
212 691-1910
Camera cranes & dollies; lamps, CSI & quartz fixtures; lighting stands & rigging; lighting control boards, dimmer packs, diffusion & efx material, cyc lighting; generators, power dividers, inverters & converters.

LEE-RAY INDUSTRIES, INC. ★
38 E. 1 Ave., Mesa, AZ 85202
602 962-6806
Video equipment carriers.

LEITCH VIDEO, LTD. ★
10 Dyas Rd., Dan Mills, Ont. M3B 1V5, Canada
416 445-9640
Video sync, black burst, color bar, multiburst, staircase ramp, source ID & safe title area generators; video delay lines, video signal & cable equalizers; video proc amps, pulse amps, DAs & SC amps; monitor calibrators. Video test signal generators; sch phase monitor; digital clocks, master & slave clocks.

LEMO USA, INC. ★
Box 6626, Santa Rasa, CA 95406
707 523-0600
Audio patch panels; connectors, jackfields.

LENCO, INC., ELECTRONICS DIV. ★
300 N. Maryland St., Jacksan, MO 63755
314 243-3147
Video sync, black burst, color bar, multiburst & stairstep ramp generators; NTSC encoders, decoders; video delay lines; video proc amps, pulse amps, DAs, SC amps; monochrome, NTSC & RGB video monitors. RF demodulators; video noise meters.

LENZAR OPTICS CORP.
1006 W. 15 St., Riviera Beach, FL 33403
305 844-0263
Camera lenses.

LERRO ELECTRICAL CORP., COMM. SYSTEMS DIV. ★
3125 N. Broad St., Philadelphia, PA 19132
215 223-8200
Mobile van design & construction; facility turnkey installations.

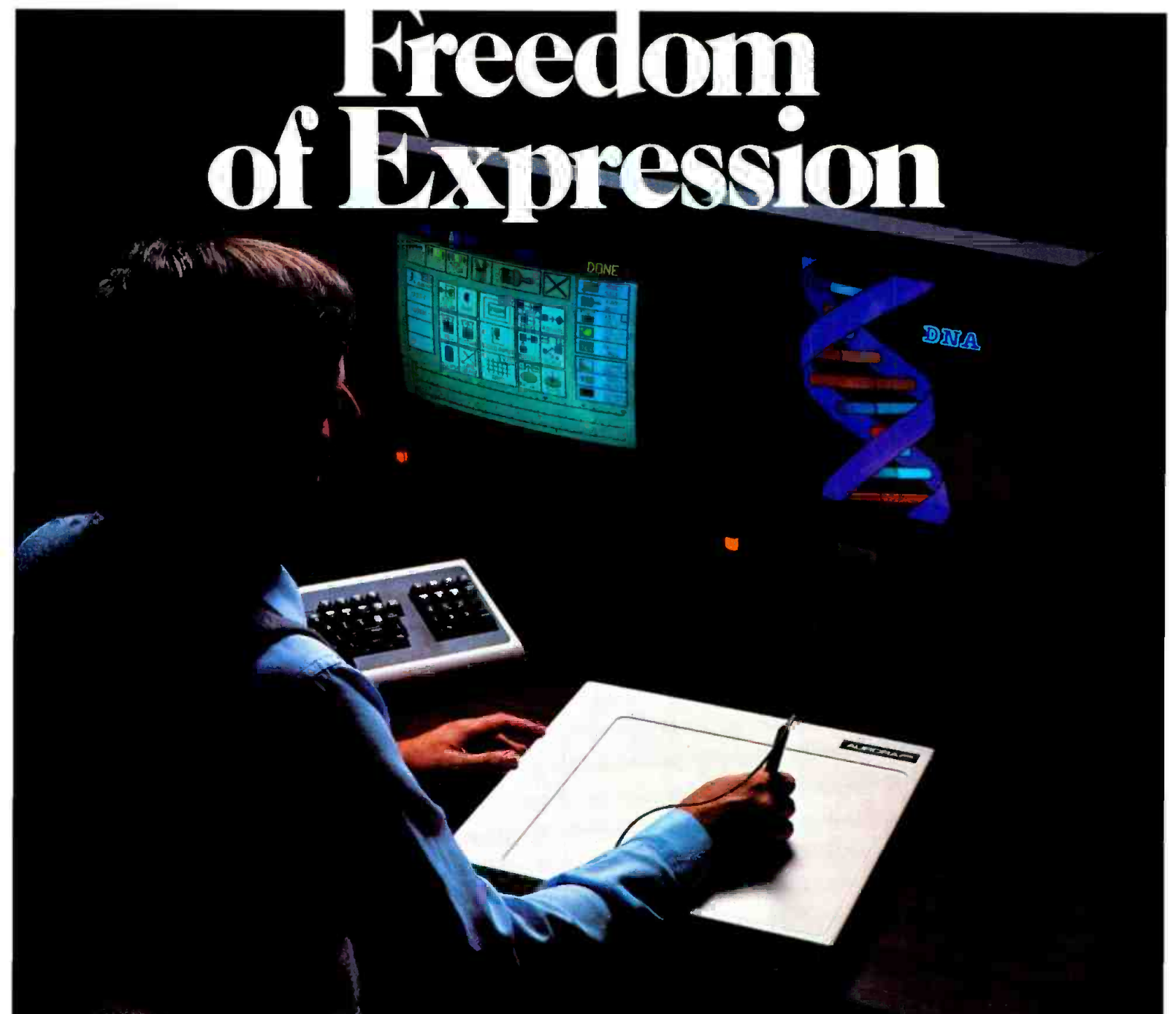
LEXICON, INC. ★
60 Turner St., Waltham, MA 02154
617 891-6790
Digital audio special effects, digital delay & reverb, audio/video sync delay, audio time compression/expansion.

LIBRA PROGRAMMING, INC.
1945 E. 7000 Sauth, Salt Lake City, UT 84121
800 453-3827
Radio business & traffic automation hardware.

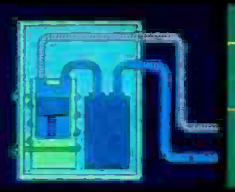
LIGHTNING ELIMINATION ASSOC. ★
12516 Lakeland Rd., Santa Fe Springs, CA 90670
213 944-0916
Surge protectors.

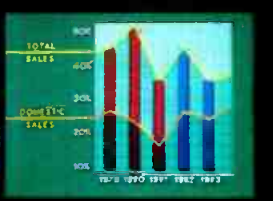
www.americanradiohistory.com

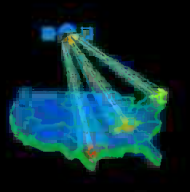
Freedom of Expression



The Aurora/100 digital videographic and animation system. Creativity limited only by your imagination.







The Aurora/100 is the most powerful television artist's tool ever developed. We've taken the time to do it right. In fact, our people pioneered in the design and application of digital videographic and animation systems starting in the early 70's.

The Aurora/100 was designed first and foremost to permit real artistic flexibility. It's not just an extended character generator but a complete graphic and animation system built from the ground up by creative people for creative people.

This is an extraordinarily powerful system. Yet it is simple to learn. Easy to use. And it requires absolutely no computer experience.

You will be amazed at the speed with which ideas and concepts can be transformed into exciting, colorful visual images.

The Aurora/100 features real-time animation, freehand painting, powerful graphic editing tools, character generation, video input and many other capabilities.

Digital videographics has come of age. Aurora systems are already in use in NTSC and SECAM broadcast, post production and industrial applications in the U.S., France. Japan and Canada.

The Aurora/100. Limited only by your imagination.

AURORA

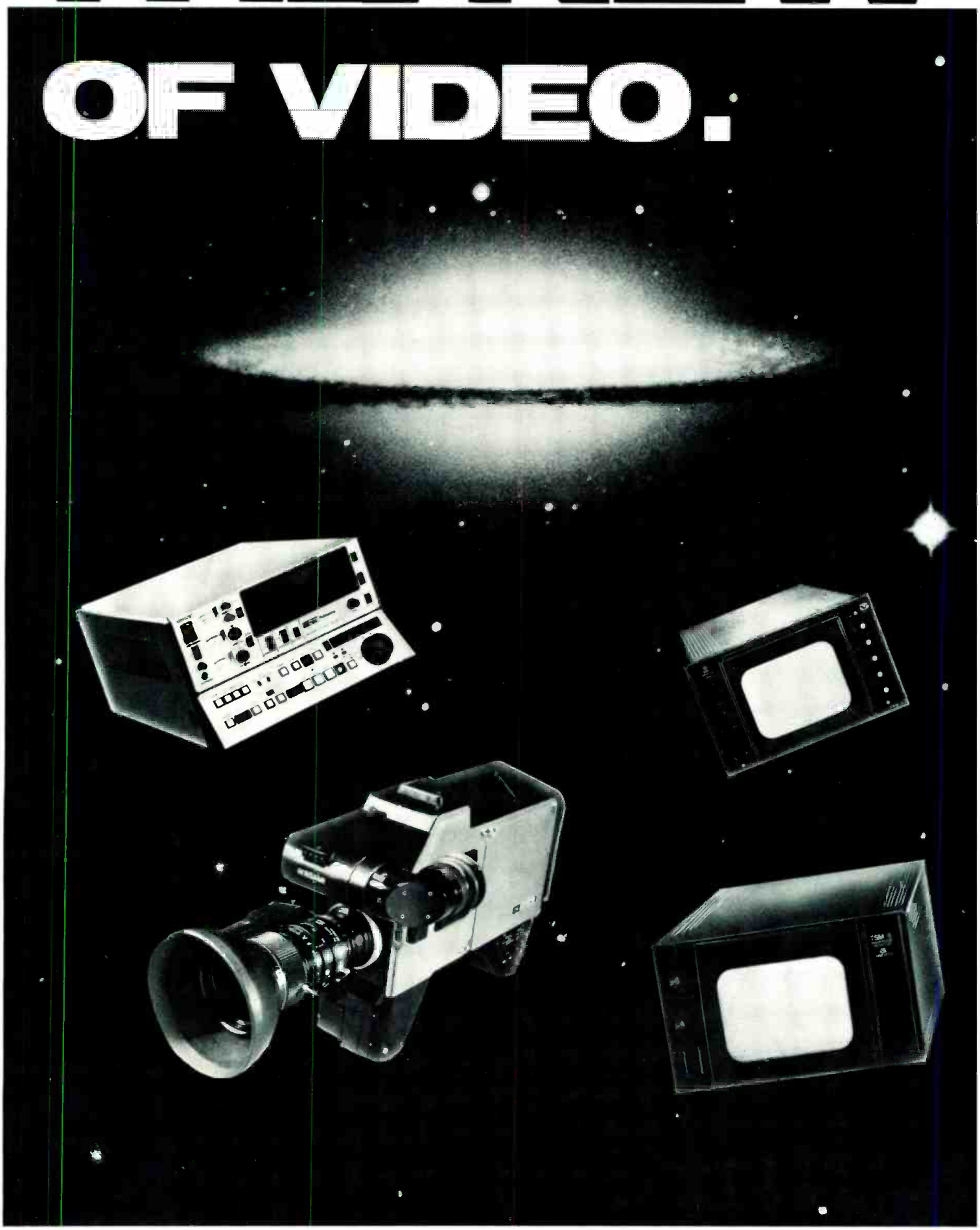
Aurora Systems, 185 Berry St., San Francisco, CA 94107 (415) 777-2288

Circle 167 on Reader Service Card

www.americanradiohistory.com

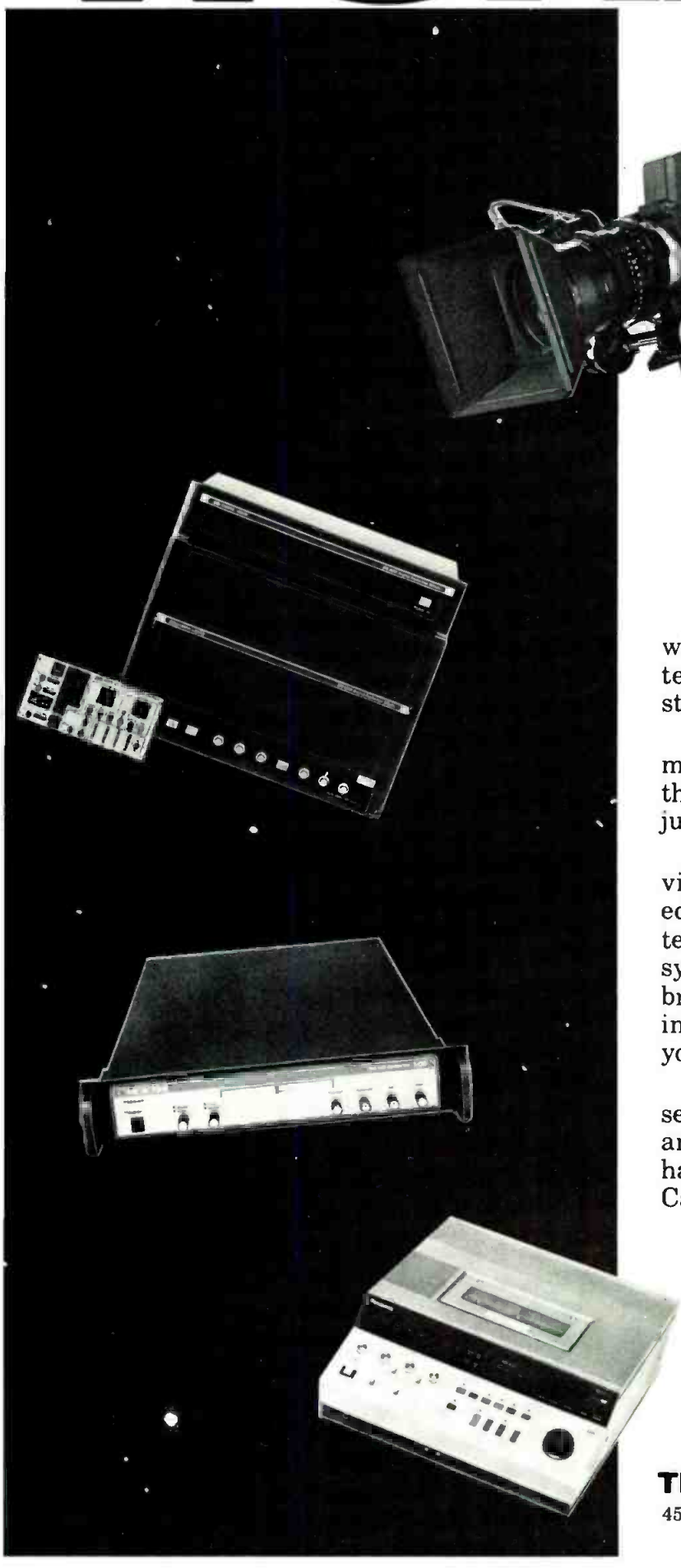
THE NEW

OF VIDEO.



www.americanradiohistory.com

WORLD



CAMERA MART, THE SOURCE FOR EVERYTHING IN TODAY'S NEW WORLD OF VIDEO TECHNOLOGY.

At Camera Mart, we're keeping pace with the rapidly advancing science of video technology to give you the most sophisticated state-of-the-art equipment available.

In the new world of video, equipment is more flexible, more versatile, more accurate than ever before, with capabilities far ahead of just a year ago.

At Camera Mart we can give you entire video systems: cameras, sound, lighting, editing...plus the expertise of our trained technical staff to help you put together the system that's exactly right for your needs, TV broadcasting, field production, fixed or mobile installations, ENG/electronic cinematography, you name it.

Whether you want to buy, rent or lease, see what's been happening in video research and development. See how much more you can have with the latest advanced video systems at Camera Mart.

Products Shown:
Sony BVU-800 Broadcast Cassette VTR, Ikegami HL-79 ENG/EFP Camera, Videotek TSM-5 Wave Form Monitor, Videotek VSM-5 Vectorscope, Ikegami EC-35 Electronic Cinematography Camera, Quantel DPE 5000 Digital Effects System, Panasonic NV-8500 VHS Editing Recorder, Microtime T-120 Time Base Corrector.

The Camera Mart, Inc.

456 W. 55th St., New York 10019 • (212) 757-6977/Telex: 1-2078
Video Department: 800 Tenth Ave.
Sales • Service • Rental

Circle 168 on Reader Service Card

www.americanradiohistory.com

LIPSNER-SMITH CO., SUBSIDIARY RTI ★
4700 Chase Ave., Lincolnwood, IL 60646
312 675-8473
Audio power rewind; ultrasonic film cleaners; editing, production consoles.

LISTEC TELEVISION EQUIPMENT CORP. ★
39 Cain Dr., Plainview, NY 11803
516 694-8963
Vinten tripods, heads, pedestals, ENG braces; Digivision monitor-based teleprompters. Richmond portable audio consoles.
SEE AD PG. 182
Refer to Reps/Distributors section

LIVE SOUND, INC. ★
1741 N. Ivar St., Ste. 118, Hollywood, CA 90028
213 462-3351
Music library; syndicated radio programming.

LOGICA, INC. ★
666 Third Ave., New York, NY 10017
212 599-0828
Digital art/paint systems; teletext editing & transmission systems.

★ MEANS IT'S VERIFIED

LOGITEK ★
3320 Bering Dr., Houston, TX 77057
800 231-5870
Portable, mono & stereo studio, automated & audio for TV mixing consoles; phono preamps; audio preamps, line, monitor & power amps, DAs; VU, PPM & LED audio level indicators; timers.

LONG ENGINEERING CO.
961 Burke St., Winston-Salem, NC 27101
919 725-2306
Radio & TV studio design; facility turnkey installations; Deltronix custom mixers & consoles, intercom systems & transformers.

LORAL MICROWAVE COMMUNICATIONS
9020 Balboa Ave., San Diego, CA 92123
714 278-4100
FM transmitters; intercity, portable ENG & airborne microwave; central microwave receivers; microwave & telco STLs; microwave antennas.

LOUISVILLE PRODUCTIONS ★
520 W. Chestnut St., Louisville, KY 40202
502 582-7744
Studio & mobile teleproduction facilities; video post-production facility.

LOWEL-LIGHT MFG., INC. ★
475 10 Ave., New York, NY 10018
212 947-0950
Quartz lighting fixtures, location lighting kits; lighting stands & rigging, diffusion & efx material.
SEE AD PG. 99
Field Office:
CA Lowel-Light West, 3407 West Olive Ave., Burbank 91505 . . . . . 213 846-7740

LPB, INC. ★
28 Bacton Hill Rd., Frazer, PA 19355
215 644-1123
Mic mixers; mono, stereo & audio for TV mixing consoles; turntables, pickup arms; AM & FM compressor/limiters; audio DAs.
SEE AD PG. 197
Field Office:
CA Burden Assoc., 20944 Sherman Way. Ste. 216, Canoga Park 91303. . . . . 213 340-4590
Refer to Reps/Distributors section

LTM CORP. OF AMERICA
1160 N. Las Palmas Ave., Hollywood CA 90038
213 460-6166
Lamps; HMI, CSI & quartz fixtures; lighting stands & rigging; lighting control boards; cyc lighting. Nicad, silver-zinc & lead-acid batteries & chargers; inverters, converters; foam insert transportation cases. Lighting & ac cable, connectors. Mic mixers; mic stands, booms & dollies. Equipment rental service; stage, studio rentals; studio, set design.

L-W INTERNATIONAL ★
6416 Variel Ave., Woodland Hills, CA 91367
213 348-8614
16/35mm telecine projectors.

LYON LAMB VIDEO ANIMATION ★
8257 Beverly Blvd., Los Angeles, CA 90048
213 655-0606
Video animation controllers; single-frame video editors.

3M CO., MAGNETIC AUDIO/VIDEO PRODUCTS DIV. ★
3M Center, St. Paul, MN 55144
612 736-1149
Open-reel audio tape, carts & cassettes; sprocketed magnetic film; empty reels & carts, leader tape, tape loaders. Two-inch, one-inch, ¾-inch & half-inch videotape; tape cleaners & evaluators, empty reels & containers.
SEE AD PG. 22-23
Refer to Reps/Distributors section

3M CO., MAGNETIC AUDIO/VIDEO PRODUCTS DIV. ★
3M Center, Bldg. 223-5E, St. Paul, MN 55144
612 733-7358
Fixed head, open-reel digital audio recorders.
Refer to Reps/Distributors section

3M CO., MAGNETIC AUDIO/VIDEO PRODUCTS DIV. ★
3M Center, Bldg. 223-5S, St. Paul, MN 55144
612 733-8132
One-inch C VTRs; VTR slow-mo controllers; character generators, camera/VTR digitizers; colorizers; parallel & serial interface routing switchers; serial interface machine control; sync, black burst & color bar generators; video proc amps. DAs.
SEE AD PG. 95,169
Refer to Reps/Distributors section

MacKENZIE LABORATORIES
5507 N. Peck Rd., Arcadia, CA 91006
213 579-0440
Single-deck, dual/triple-deck & multideck cart player/recorders.

M/A-COM DCC, INC. ★
11717 Exploration Ln., Germantown, MD 20874
301 428-5500
Transmit/receive, receive only & transportable satellite earth stations.

M/A-COM LAND MOBILE COMMUNICATIONS CORP. ★
1362 Borregas Ave., Sunnyvale, CA 94086
408 734-4220
RF filters & loads, diplexers; tx & rx combiners.

M/A-COM OMNI SPECTRA, INC. ★
21 Continental Blvd., Merrimack, NH 03054
603 424-4111
RF cable, connectors.

M/A-COM VIDEO SYSTEMS, INC. ★
63 Third Ave., Burlington, MA 01803
617 272-3000
Receive only satellite earth stations; intercity, portable ENG & airborne microwave; microwave central receivers; remote control systems; remote pickup equipment; microwave & fiberoptic STLs; satellite dish antennas; fiberoptic broadcast transmission system.

MAGNASYNC/MOVIOLA CORP. ★
5539 Riverton Ave., N. Hollywood, CA 91603
213 763-8441
16/35 mm telecine systems; sprocketed magnetic film transports; film/video synchronizers.

MAGNA-TECH ELECTRONIC CO., INC. ★
630 Ninth Ave., New York, NY 10036
212 586-7240
Sprocketed magnetic film transports, dubbers; film/video synchronizers.

MAGNECRAFT ELECTRIC CO.
5575 N. Lynch Ave., Chicago, IL 60630
312 282-5500
Coaxial & RF switches/relays.

MAGNETIC REFERENCE LAB ★
229 Polaris Ave., Ste. 4, Mountain View, CA 94043
415 965-8187
Audio test tapes.

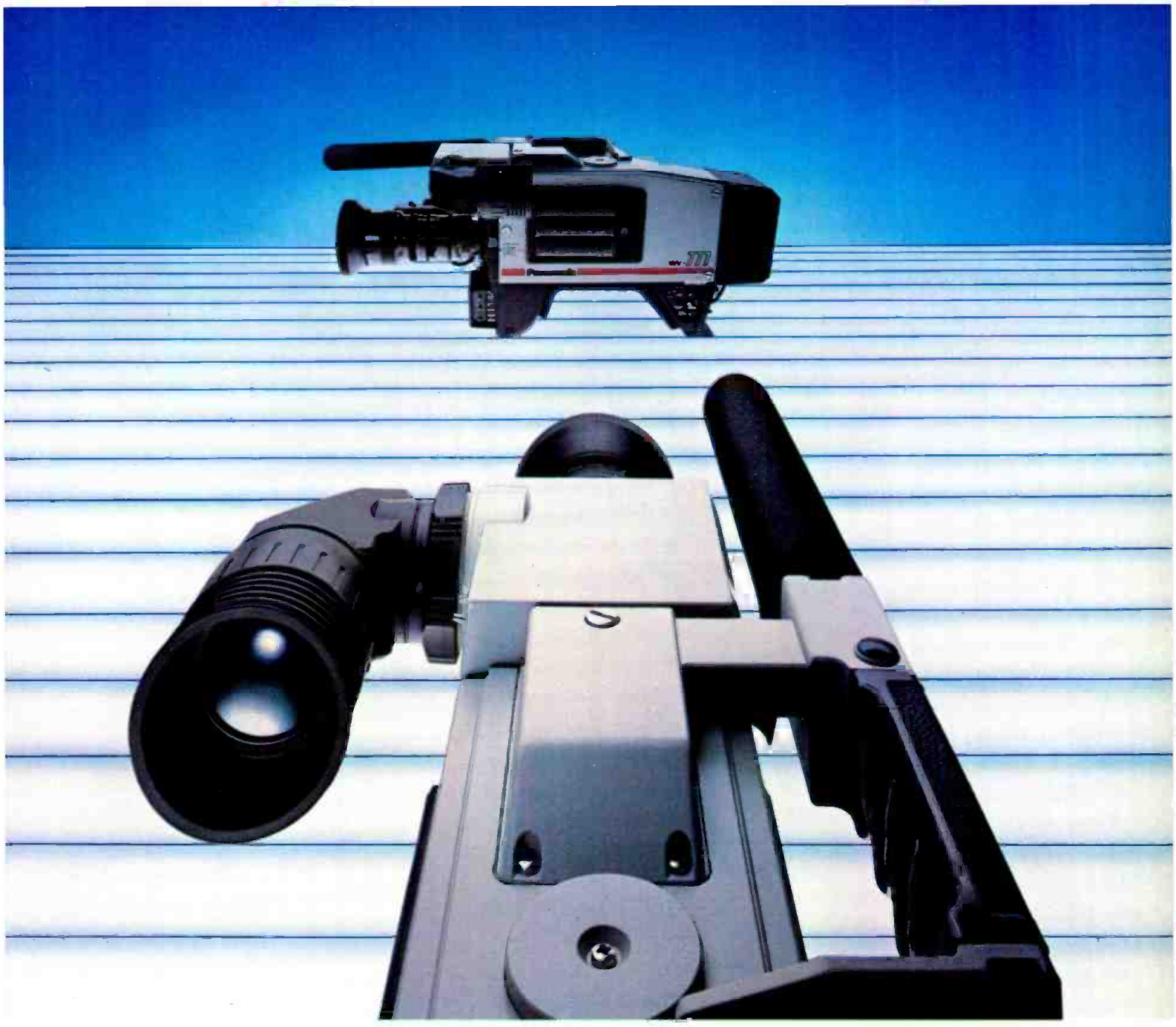
MAGNUM TOWERS, INC. ★
9370 Elder Creek Rd., Sacramento, CA 95826
916 381-5053
AM antennas; towers & masts, tower hardware & construction equipment.

THE MANAGEMENT ★
Box T, Aledo, TX 76008
817 441-8045
Radio business automation systems.

MARATHON PRODUCTS CORP. ★
334 W. Boylston St., W. Boylston, MA 01583
617 853-0988
Audio head degaussers; carts & test tapes, tape cleaners & evaluators, torque testers, speed indicators; tape cart reloading.

MARCOM ★
Box 66507, Scotts Valley, CA 95066
408 438-4273
Rood extended bandwidth telephone transmission system; distributor of full line audio, video, RF & T&M equipment.

www.americanradiohistory.com



Panasonic adds a new perspective to prism optics performance. Introducing the WV-777.

You expect great performance from a three-tube prism optics camera and that's just what you get with the Panasonic WV-777. But Panasonic knows it takes more than a great picture to make a great camera.

Take the WV-777's sleek, low-profile design and unique side-mounted hand grip. They give the cameraman a clear, unobstructed view that makes staying with the action easy.

The WV-777 is also easy to set up and operate because all critical controls are behind an easy-open side panel. You'll find horizontal and vertical linearity, skew, centering, red and blue registration and more. For added precision, there are digital auto white and black circuits with memory.

The 1.5" di-optic electronic viewfinder is not only fully adjustable, it also includes indicators for battery warning, VTR tally and other key operating conditions.

With its magnesium die-cast chassis, the WV-777 combines light weight with strength to ensure a high level of performance over a long period of time. Its three Saticon® pickup tubes and middle index prism produce 550 lines horizontal resolution and a S/N ratio of 55 dB at recommended illumination. And for easy serviceability, the WV-777 has modular plug-in fiberglass circuit boards.

The WV-777 has a −72dB mic input, a −20dB line input, 2 audio output levels, a snap-on AC adapter and battery case. And for studio use, there's also an optional 5" (meas diag) studio viewfinder, studio lens package and remote control unit.

But perhaps the Panasonic WV-777's most surprising element is its price, $7,650.* So broaden your perspective and get the prism optics camera designed with the cameraman in mind. The Panasonic WV-777.

Saticon is a registered trademark of NHK (Japan Broadcasting Corp.).
*Manufacturer's suggested price.

Panasonic
VIDEO SYSTEMS DIVISION

For additional information on the new WV-777 mail to:
Panasonic Industrial Company
Video Systems Division
One Panasonic Way
Secaucus, N.J. 07094

Name_____ (Please Print)
Company_____
Address_____
City_____
State_____ Zip_____
Phone (____) _____

BME-982

Circle 169 on Reader Service Card

www.americanradiohistory.com

MARCONI ELECTRONICS, INC. ★
100 Stonehurst Ct., Northvale, NJ 07647
201 767-7250
Studio video cameras; one-inch C VTRs; solid state telecines, telecine color correctors; colorizers; sync, black burst & color bar generators; NTSC encoders, decoders, video signal & cable equalizers; TBCs, color correctors; video pulse amps & DAs; video test charts & slides; video monitoring unit. AM, FM, UHF & VHF transmitters; two-way radio communications transmitters, receivers. Studio consoles, 19-inch equipment racks; jackfields, patch panels.
SEE AD PG. 60

MARKETRON
2180 Sand Hill Rd., Menlo Park, CA 94025
415 854-5301
Business computer services for radio & TV; automated playlist program system.

MARSHALL CLAUDE MICHAEL ★
9674 Telstar Ave., El Monte, CA 91731
213 686-0141
Oscilloscopes, voltmeters, multimeters, logic analyzers; tool kits.

MARSHALL ELECTRONIC ★
1205 York Rd., Ste. 14, Lutherville, MD 21093
301 484-2220
Digital audio special effects, delay & reverb; analog special effects, audio/video sync delay, time compression/expansion.

MARTI ELECTRONICS, INC. ★
Box 661, Cleburne, TX 76031
817 645-9163
Audio ALC/AGC amps, compressor limiters; dynamic mics; line, monitor & power amps. Portable & airborne microwave; remote control systems & remote pickup. STLs; FM & TV SCA equipment. Two-way radio transmitters, receivers; transmission line & program subcarrier.
SEE AD PG. 202

MASTER BROADCAST SERVICES, INC.
6 E. Trenton Ave., Morrisville, PA 19067
215 736-0211
Syndicated radio programming.

MATRIX SYSTEMS CORP.
5177 Douglas Fir Rd., Calabasas, CA 91302
213 992-6776
Manual & computer-controlled MC switchers.

MATRIX VIDEO SERVICES, INC. ★
727 Eleventh Ave., New York, NY 10019
212 265-8500
Teleproduction facilities, complete audio/video mobile unit & digital post-production services.

MATTHEWS STUDIO EQUIPMENT, INC. ★
2405 Empire Ave., Burbank, CA 91504
213 843-6715
Complete support equipment for mics, lighting, set design; helicopter rigs; cranes & dollies.

MAXELL CORP. OF AMERICA ★
60 Oxford Dr., Moonachie, NJ 07074
201 440-8020
Audio & videotape & cassettes.
SEE AD PG. 65
Field Offices:
CA Joe Birskovich, 236 North Santa Cruz Ave., Ste. 231, Los Gatos 95030 . . . . . 408 395-1998
IL 2250 East Devon Ave., Ste. 138, Des Plaines 60018 . . . . . 312 296-1010
NY John Selvaggio, 27 Thatcher Ave., Harrison 10522 . . . . . 914 835-1184
NY Joe Santangelo, Six Wellington Ct., Lake Ronkonkoma 11779. . 516 981-8372
Refer to Reps/Distributors section

MBB HELICOPTER CORP. ★
Box 1607, West Chester, PA 19330
215 431-4150
ENG-equipped helicopters.

McCURDY RADIO ★
1711 Carmen Dr., Elk Grove Village, IL 60007
312 640-7077
Mic mixers; mono, stereo, audio for TV mixing consoles; AM compressor/limiters; parametric equalizers & filters; turntables; hardwired intercoms; audio line, monitor & power amps, DAs, amp power supplies; audio patch panels; low frequency extenders, PPM meters; digital, master & slave clocks; audio post-production services; radio & TV studio design.

MCG ELECTRONICS, INC.
160 Brook Ave., Deer Park, NY 11729
516 586-5125
Surge protectors.

MCI, DIV. SONY CORP. OF AMERICA ★
1400 W. Commercial Blvd., Fort Lauderdale, FL 33309
305 491-0825
Portable & studio mono/stereo consoles; automated & TV audio consoles; 2, 4 & multitrack studio ATRs; SMPTE time code synchronizers.
SEE AD PG. 83
Field Office:
TN Nashville Commerce Mall, Ste. B9, 1717 Elm Hill Pike, Nashville 37210 . . . . . 615 366-0333
Refer to Reps/Distributors section

★ MEANS IT'S VERIFIED

MCI/QUANTEL ★
Box 50810, Palo Alto, CA 94303
415 856-6226
Digital effects processors; digital art/paint system, camera/VTR digitizer; compressor/positioner; digital still store; TBCs, field & frame synchronizers, noise reducers; digital standards converters; audio/video sync delay.
SEE AD PG. 63
Refer to Reps/Distributors section

McKAY DYMEK, INC.
108 S. Spring St., Claremont, CA 91711
714 621-6711
Loudspeakers; AM & communications antennas.

McMARTIN INDUSTRIES, INC. ★
4500 S. 76 St., Omaha, NE 68127
402 331-2000
Mic mixers; portable, mono & stereo, & audio for TV mixing consoles; graphic equalizers; AM & FM compressor/limiters; ALC & AGC amps; hardwired intercoms; line, monitor, power amps & preamps; VU meters, AM, FM, VHF, UHF & LPTV transmitters & translators; RF modulators, demodulators, stereo generators, amps; AM stereo, FM & TV exciters; AM, FM, TV (HP & CP) & comm. antennas, antenna tuning units; transmission line & connectors; towers; RF program subcarrier & carrier current systems; FM & TV SCA equipment; EBS two-tone systems; comm. monitors & receivers; remote control systems; remote pickup equipment; transmit/receive & receive only satellite earth stations; FM field intensity meters; frequency monitors & counters; modulation monitors.

McMICHAEL, LTD. ★
Wexham Rd., Slough, Berks., SL2 5EL, England
(0753) 21610
Standards converters; broadcast color monitors; clock & logo generators.
SEE AD PG. 114-115

MEAD DATA CENTRAL
200 Park Ave., New York, NY 10166
212 883-8560
Computer-accessed library of wire service stories, newspapers, magazines.

MEDIA CONCEPTS, INC. ★
559 49 St. S., St. Petersburg, FL 33707
813 321-2122
Professional VHS VCRs, videocassette automation systems; foam insert transportation cases.

MEMOREX CORP. ★
Box 988 Santa Clara, CA 95052
408 987-1343
Audio carts and cassettes; tape head cleaners; VHS & Beta videocassettes.

MERLIN ENGINEERING WORKS, INC. ★
1880 Embarcadero Rd., Palo Alto, CA 94303
415 856-0900
Quad VTR refurbishing, replacement parts; one-inch B & C extended play and high-band modifications; TBCs; color duplicators.
SEE AD PG. 16

METRO TAPE ★
5746 Sunset Blvd., Hollywood, CA 90028
213 856-1000
Teleproduction & post-production facilities.

MICMIX AUDIO PRODUCTS, INC. ★
2995 Ladybird Ln., Dallas, TX 75220
214 352-3811
Audio processing, mechanical reverb, noise reduction systems.

MICRO COMMUNICATIONS, INC.
Box 4365, Manchester, NH 03108
603 624-4351
RF filters, loads & switches; power dividers, diplexers & portable microwave; FM, TV CP & microwave antennas; waveguide transmission line.

MICRO CONTROL ASSOCIATES, INC. ★
Box 694, Cleburne, TX 76031
817 295-7771
Intercity microwave; remote control systems, STLs; FM SCA equipment; program subcarrier equipment.

MICRODYNE CORP. ★
Box 7213, Ocala, FL 32672
904 687-4633
Satellite antennas, receivers & TV modulators; remote control systems.

www.americanradiohistory.com

If you want Plumbicon* picture quality from your next TV camera buy – insist on Plumbicon tubes, because...

...if it's a professional TV color camera – it's available with Plumbicon tubes.

When you're paying top dollar for a professional TV camera, it is assumed by the manufacturer of the camera that you will specify the pickup tubes for your system. Obviously, the camera manufacturer wants to sell you *his* camera, and since he knows that the overwhelming majority of knowledgeable video purchasers will specify Plumbicon tubes, virtually every professional TV camera system produced for today's market is designed to use the Plumbicon tube.

The crucial factors of sensitivity, resolution and burn-in that affect the "total in-system performance" of ENG and EFP cameras and the consistent record of singularly brilliant performance of the one-inch and the 30mm Plumbicon tubes in studio cameras are generally credited for the professional's continued preference for Plumbicon tube-equipped cameras; that is why an estimated ninety percent of all network color broadcasting originates in Plumbicon pickup tubes.

Whatever your application — ENG, EFP or Studio; whatever the origin of your next camera — American-made or imported; and regardless of the camera salesman's personal persuasion (or his own compensation scheme) — you will get Plumbicon quality pictures only by specifying, insisting, demanding Plumbicon tubes in your camera.

Yours for the specifying, the full line of Plumbicon tubes — ½", ⅔", 1" and 30mm diameters, including low capacitance Diode Gun™ and special anti-comet-tail types — is available in the professional TV camera of your choice and is in demand today as never before by camera users in every segment of broadcast and corporate television.

There is only one Plumbicon, and that famous Emmy-award-winning pickup tube is available for the asking in every three-tube professional TV color camera sold today. For more information, contact: Amperex Electronic Corporation, Slatersville Division, Slatersville, Rhode Island 02876. Telephone: 401-762-3800.

Amperex®

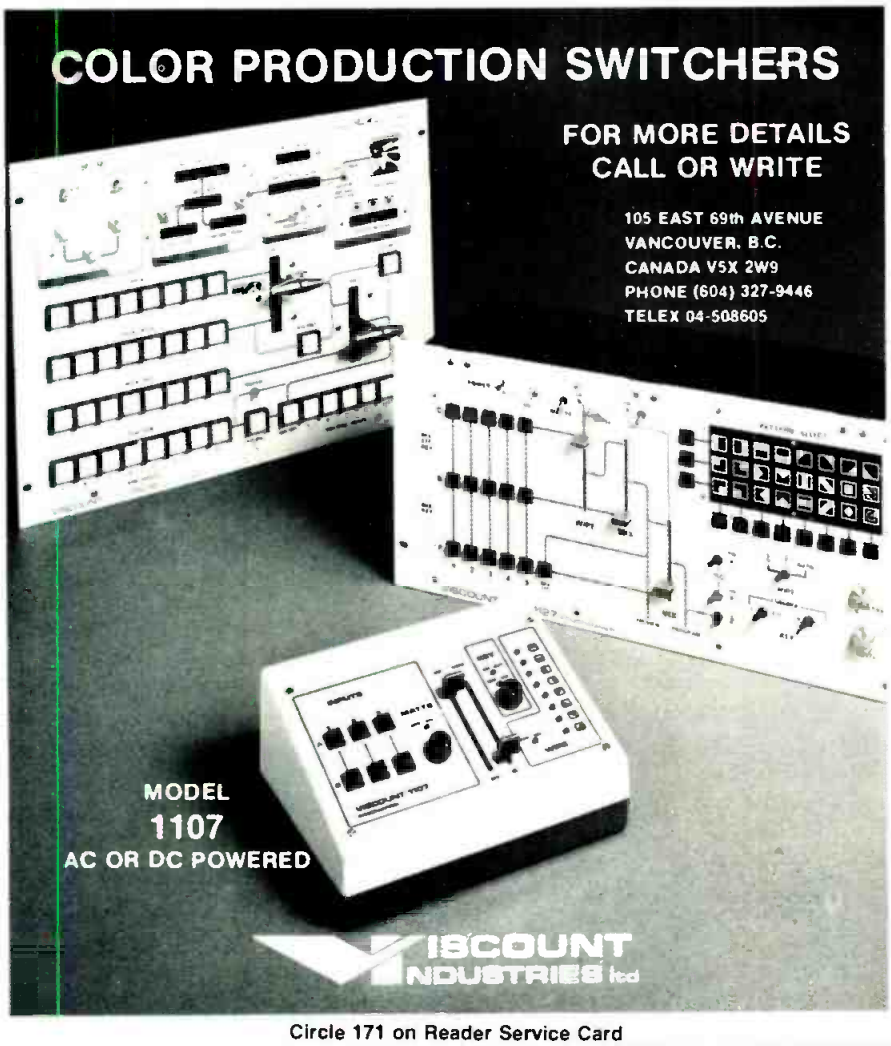
... dedicated to product excellence

A NORTH AMERICAN PHILIPS COMPANY

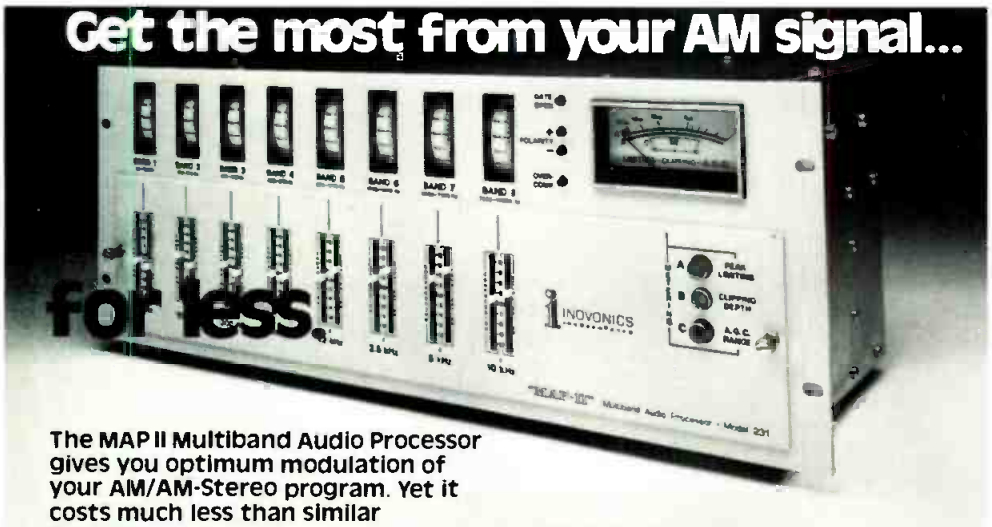
*Registered trademark of N.V. Philips of the Netherlands.

Circle 170 on Reader Service Card

www.americanradiohistory.com



Circle 171 on Reader Service Card



The MAP II Multiband Audio Processor gives you optimum modulation of your AM/AM-Stereo program. Yet it costs much less than similar systems.

Discriminate Compression
Only MAP II offers you independent compression and equalization for each of eight bands. Input level is held constant by a slow, gain-riding A.G.C.

Inaudible Phase Optimization
Program phase is silently "rotated" for maximum positive modulation.

Absolute Peak Control
A unique integrated peak controller combines a hard clipper with a low-distortion peak limiter.

Convenient Operation
Features include selectable low- and high-pass filters, "proof" mode, and built-in pink-noise generator.

Call or write today for more information. Map II—$1670.

Inovonics Inc.

503-B Vandell Way
Campbell, CA 95008

Telephone
(408) 374-8300

Circle 172 on Reader Service Card

MANUFACTURERS

MICROFLECT CO., INC. ★
3575 25 SE, Salem OR 97302
503 363-9267
Guyed towers & masts.

MICRON AUDIO PRODUCTS, LTD. ★
210 Westlake Dr., Valhalla, NY 10595
914 761-6520
RF, electret/condenser & lavalier mics.

MICROPROBE ELECTRONICS, INC./MEI ★
875 N. Michigan Ave., Ste. 1532A, Chicago, IL 60611
312 440-3111
Complete program automation systems, time insertion sequencers, computer automation controllers, radio business automation hardware.

MICROTIME, INC. ★
1280 Blue Hills Ave., Bloomfield, CT 06002
203 242-4242
TBCs, frame synchronizers, framestroes, TBC/framestores, noise reducers, image enhancers; ad inserters.
SEE AD PG. 73
Field Offices:
CA Gary Armour,
San Diego 714 444-8747
CT Daniel Sofie,
Bloomfield 203 242-4242
CT Jerry Rankin,
Bloomfield 203 242-4242
IN Alan Kartes,
Indianapolis 317 776-0079
PA Ray Bouchard,
Harrisburg 717 848-1043
TX Steve Krant,
Dallas 214 644-0232

★ MEANS IT'S VERIFIED

MICRO-TRAK CORP. ★
620 Race St., Holyoke, MA 01040
413 536-3551
Mic mixers; portable, mono & stereo & audio for TV mixing consoles; turntables, pickup arms, phono preamps, complete disc consoles; audio preamps, line, monitor & power amps, DAs; monitor speakers.

MICROTRAN CO., INC.
145 E. Mineola Ave., Box 236, Valley Stream, NY 11582
516 561-6050
Audio tape bulk erasers & head degaussers; full line transformers.

MICROWAVE FILTER CO., INC. ★
6743 Kinney St., E. Syracuse, NY 13057
800 448-1666
RF filters, power dividers & diplexers; custom filters for all microwave uses.
SEE AD PG. 34

MIDWEST CORP. ★
1 Sperti Dr., Edgewood, KY 41017
606 331-8990
Mobile vehicle construction; custom turnkey systems.
SEE AD PG. 75
Field Offices:
FL 3331 NW 82 St.,
Miami 33122 . . . . . 305 592-5355

www.americanradiohistory.com

MANUFACTURERS

KY 1804 Cargo Ct.,
Louisville 40299 ..... 502 491-2888
MI 1328 Wheaton Ave.,
Troy 48084 ..... 313 689-9730
MD 4720 B Boston Way,
Lanham 20801 ..... 301 577-4903
OH 7500 Wall St.,
Cleveland 44125 ..... 216 447-9745
OH 4410 Westerville
Columbus 43229 ..... 614 476-2800
VA 1395 Airrail,
Virginia Beach 23455 ..... 804 464-6256

L. MATTHEW MILLER ASSOC., LTD.
48 W. 21 St., New York, NY 10010
800 221-9328
Video production & post-production equipment rentals & sales.

MILLER PROFESSIONAL EQUIPMENT, INC. ★
10816 Burbank Blvd., N. Hollywood, CA 91601
213 766-9451
Tripods, heads & dollies.

MINICOM ★
Box 302, Walnut Creek, CA 94596
415 932-8134
Hardwired intercoms.

MINNEAPOLIS MAGNETICS, INC. ★
7178 Shady Oak Rd., Eden Prairie, MN 55344
612 944-7660
Replacement audio & video heads; VTR rebuilding service.

MINOLTA CORP.
101 Williams Dr., Ramsey, NJ 07446
201 825-4000
Light meters, illuminance meters, luminance meters, color temperature meters, chroma meters, TV monitor analyzers.

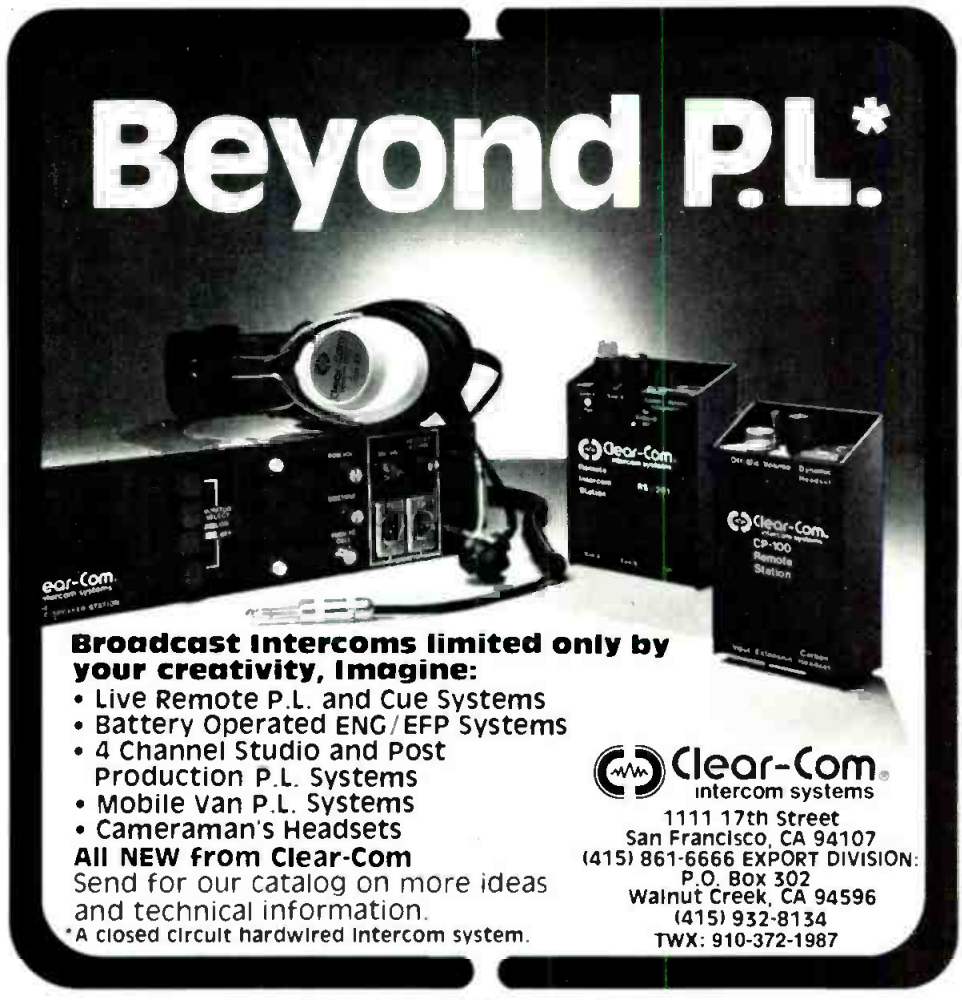
MITSUBISHI ELECTRIC SALES AMERICA, INC. ★
110 New England Ave. W., Piscataway, NJ 08854
800 631-5377
Fixed head, open-reel digital audio recorder; digital adapter/video recorder (consumer 14-bit); digital audio recorder rental service.

MOBILE TECHNICAL SERVICES, INC. ★
129 Mt. Auburn St., Cambridge, MA 02138
617 547-3320
Mobile teleproduction facility.

MILAM AUDIO CO. ★
1470 Valle Vista St. Tekin, IL 61554
309 346-3161
Audio studio design services; audio DAs.

MOBILE VIDEO PRODUCTIONS ★
888 Post St., San Francisco, CA 94109
415 386-1188
Studio & mobile teleproduction facilities; video post-production facility.

MOBILE VIDEO SERVICES, LTD. ★
2139 Wisconsin Ave., NW, Washington, DC 20007
202 298-9100
Studio & mobile teleproduction facilities; video post-production facility.


Beyond P.L.*
Clear-Com
CP-100
Remote
Station
Broadcast Intercoms limited only by your creativity, Imagine:
• Live Remote P.L. and Cue Systems
• Battery Operated ENG/EFP Systems
• 4 Channel Studio and Post Production P.L. Systems
• Mobile Van P.L. Systems
• Cameraman's Headsets
All NEW from Clear-Com
Send for our catalog on more ideas and technical information.
*A closed circuit hardwired intercom system.
Clear-Com intercom systems
1111 17th Street
San Francisco, CA 94107
(415) 861-6666 EXPORT DIVISION:
P.O. Box 302
Walnut Creek, CA 94596
(415) 932-8134
TWX: 910-372-1987

Circle 173 on Reader Service Card

See Frezzolini® at Booths 63 & 64, SMPTE

Circle 174 on Reader Service Card

www.americanradiohistory.com

MODERN TELECOMMUNICATIONS, INC. (MTI) ★
1 Dog Hommorskjold Plozo, New York, NY 10017
212 355-0510
Studio & mobile teleproduction facilities; video post-production facility.

MODULAR AUDIO PRODUCTS ★
50 Orville Dr., Bohemio, NY 11716
516 567-9620
Mono, stereo & TV audio consoles; AM compressor/limiters, graphic equalizers; audio preamps, line, monitor & power amps, DAs, amp power supplies; audio test signal generators.

MOLE-RICHARDSON CO. ★
937 N. Sycomore Ave., Hollywod, CA 90038
213 851-0111
HMI & quartz fixtures, lighting stands & rigging, lighting control boards, dimmer packs, diffusion & efx material, cyc lighting; generators.

KEITH MONKS AUDIO ★
652 Glenbrook Rd. Stomford, CT 06906
203 348-4969
Record cleaning systems; mic stands, booms, dollies. Impedance bridges; phase meters.

MONROE ELECTRONICS, INC. ★
100 Housel Ave., Lyndonville, NY 14098
716 765-2254
Telco interface equipment.

MOOG MUSIC, INC.
2500 Wolden Ave., Buffolo, NY 14225
716 681-7200
Music synthesizers.

MOSELEY ASSOCIATES, INC. ★
111 Costilion Dr., Goleto, CA 93117
805 968-9621
ALC & AGC amps, AM & FM compressor/limiters. RF power dividers, stereo generators; intercity microwave; remote control systems; microwave STLs; FM & TV SCA equipment; RF program subcarrier. Log printers, status & alarm indicators.
SEE AD PG. 131
Refer to Reps/Distributors section

MOTOROLA, INC. ★
Box 95334, Schoumburg, IL 60195
312 576-3591
AM stereo exciters; AM stereo modulation monitors.

MOTOROLA C&E, INC. ★
17-22 Whitestone Expy., Whitestone, NY 11357
212 746-1100
RF intercom systems; remote pickup equipment; two-way radio communications transmitters, receivers & antennas. RF power meters & wattmeters, frequency monitors & controllers, RF test signal generators; spectrum analyzers; oscilloscopes, delayed sweep scopes, voltmeters, multimeters, dB meters, logic analyzers. RF cable, connectors; solid state components; quartz crystals.

MPB TECHNOLOGIES, INC. ★
Box 160, Ste. Anne de Bellevue, Quebec H9X 3L5, Conodo
514 457-2035
Video animation controllers; character generators.

MPCS VIDEO IND., INC.
514 W. 57 St., New York, NY 10019
212 586-3690
Production equipment rentals; post-production services; TV studio design; video camera & monitor modification; distributor of full line video equipment.

MU-DEL ELECTRONICS, INC. ★
2426 Linden Ln., Silver Spring, MD 20910
301 587-6087
RF amplifiers, attenuators, converters & filters; diplexers.

MULTIDYNE ELECTRONICS ★
Box 528, Locust Volley, NY 11560
516 671-7278
Audio preamps, line amps, DAs. Character generators; downstream keyers; SMPTE time code generators, readers & synchronizers, proprietary time code systems; sync, black burst, color bar, multiburst, staircase ramp, source ID & countdown generators; video slate board; video signal, cable equalizers; video pulse amps, DAs, SC amps; video test signal generators.
SEE AD PG. 179

MULTI-TRACK MAGNETICS, INC.
3 Industriol Ave., Upper Soddle River, NJ 07458
201 327-9400
Sprocketed magnetic film transports, dubbers; replacement audio heads, alignment & tension gauges; film/video synchronizers. Telecines, 16/35mm telecine projectors.

MULTIVISION, INC. ★
161 Highlond Ave., Needhom, MA 02194
617 449-5830
Mobile teleproduction facility; video post-production facility.

MUSIC DIRECTOR PROGRAMMING SERVICE ★
Box 103, Indion Orchord, MA 01151
413 783-4626
Syndicated radio programming; music library; recording studio; music research books, music playlists.

THE MUSICWORKS, INC. ★
Box 111390, Noshville, TN 37211
800 251-9000
Syndicated radio programming; radio consultant.

MXR INNOVATIONS, INC. ★
740 Driving Pork Ave., Rochester, NY 14613
716 254-2910
FM compressor/limiters, graphic equalizers; digital special effects, delay & reverb; analog special effects; audio pitch shifter; audio preamps.

MZB & ASSOC.
4203 Beltway Dr., Dollos, TX 75234
214 233-5535
Teleproduction, mobile, and turnkey facilities.
SEE AD PG. 55
Refer to Reps/Distributors section

NADY SYSTEMS ★
1145 65 St., Oaklond, CA 94608
415 652-2411
RF intercom systems, RF microphones.

NAGRA MAGNETIC RECORDERS, INC. ★
19 W. 44 St., Rm. 715, New York, NY 10036
212 840-0999
Portable ATRs, 2,4-track studio ATRs; tape duplicators; replacement audio heads, head degaussers; audio test tapes; tape-based loggers, chart recorders.

NATIONAL VIDEO CENTER/ RECORDING STUDIOS, INC. ★
460 W. 42 St., New York, NY 10036
212 279-2000
Studio & mobile teleproduction facilities; video post-production facility.

NAUTEL MAINE, INC.
201 Torget Industriol Cir., Bongor, ME 04401
207 947-8200
AM transmitters; RF amps, AM & FM stereo exciters, stereo generators, modulators.

NEAL FERROGRAPH (USA), INC. ★
652 Glenbrook Rd., Stomford, CT 06906
203 348-1045
Audio cassette player/recorders.

NEC AMERICA, INC., BROADCAST EQUIPMENT DIV. ★
130 Martin Ln., Elk Grove Villoge, IL 60007
312 640-3792
ENG/EFP video cameras; large production switchers, post-production switchers; digital video effects processors, standalone effects generators; parallel & serial interface routing switchers; TBCs, frame synchronizers, noise reducers; video proc amps; signal multiplexers. FM, UHF & VHF transmitters; FM exciters; receive only satellite earth stations; portable ENG microwave; slow scan transmitters, receivers.
SEE AD PG. 40,143
Refer to Reps/Distributors section

NEI ★
934 NE 25, Portlond, OR 97232
503 232-4445
Mic mixers; portable, mono & stereo audio consoles; parametric & graphic equalizers; analog and merchanical special effects, reverb. Real time & spectrum analyzers.

NES, INC. (NATIONWIDE ELECTRONICS SYSTEMS, INC.) ★
1536 Brondy Pky., Streamwood, IL 60103
312 289-8820
Digital clocks, master & slave clocks, timers, digital instrumentation products.

NET ENTERPRISES ★
3200 Eisenhower Pkwy, Ste. Q, Ann Arbor, MI 48104
313 971-0031
Studio & mobile teleproduction facilities; video post-production facility.

NETCOM INTERNATIONAL ★
1702 Union St., Son Froncisco, CA 94123
415 921-1441
Satellite time broker, transportable downlink service, network coordination.

NETWORK PRODUCTION MUSIC, INC.
4429 Moreno Blvd., Son Diego, CA 92117
714 272-2011
Music library.

www.americanradiohistory.com

Dolby

Plug Better Sound Into Your Picture

The Dolby® Cat. No. 221 or 226 module allows you to plug the benefits of a Dolby A-type noise reduction directly into your Sony® BVH-1000/1100 or Ampex® VPR-2 1" VTR.* Operation is fully automatic. And at long last the audio performance of your VTR will rival that of professional audio tape recorders.

Dolby A-type noise reduction has been accepted for years throughout the world for high-quality tape recording and other audio transmission and storage media. It provides 10 dB of noise reduction from 30 Hz upwards, increasing to 15 dB at 9 kHz and above, without the audible side effects (such as noise modulation and overshoot distortion) associated with more conventional techniques. Dolby noise reduction can also lead to lower distortion, as it permits more conservative recording levels to reduce the risk of tape saturation.

Today wide audio bandwidth and low noise are becoming commonplace in many parts of the television origination/transmission chain. Contact us to find out how Dolby noise reduction can prevent the VTR audio track from being one of the weak links.

*Outboard Dolby noise reduction units are available for use with virtually any other video or audio recorder.

DD Dolby®

Dolby Laboratories Inc.

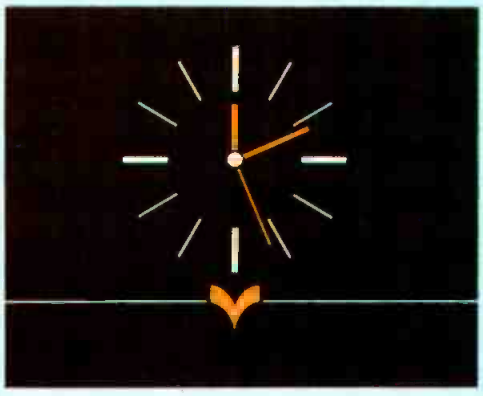
731 Sansome St.
San Francisco,
California 94111
415-392-0300
TELEX 34409

346 Clapham Road
London SW9 9AP
England
01-720-1111
TELEX 919109

S81/3127

www.americanradiohistory.com

CLOCK AND LOGO GENERATOR

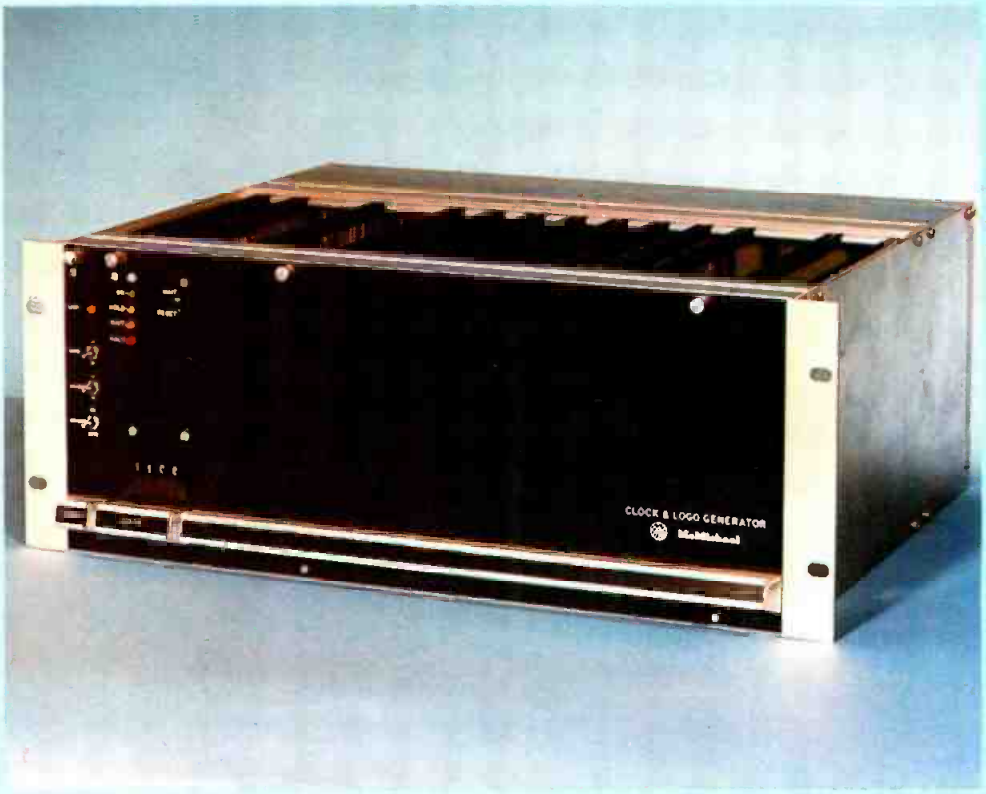


The McMichael Clock and Logo Generator electronically produces a video display comprising an analogue clock face and a fixed graphics caption.

Displays can be provided from a considerable range of designs held by the Company or may be tailored to individual requirements.

The Clock and Logo Generator is made under licence from the BBC and is supplied complete with all software necessary for immediate use.

The Broadcast quality 20in and 14in colour monitors make use of the latest technology to combine low cost and high reliability with a well converged, accurately reproduced and stable picture.



Clock and Logo Generator

BROADCAST COLOUR MONITORS

20 in Monitor

14 in Monitor

McMICHAEL

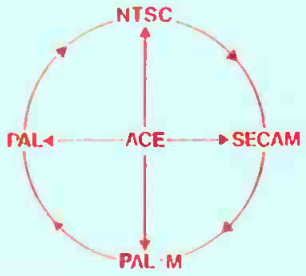
www.americanradiohistory.com

See us at IBC Stand F-15

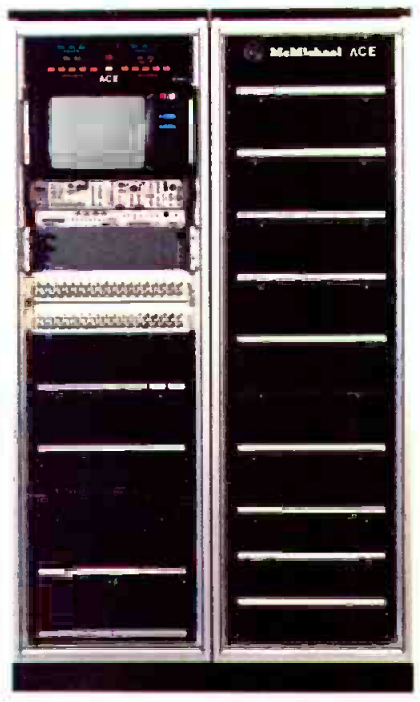
McMICHAEL ACE CONVERTER

the best in Standards Conversion

McMICHAEL ACE FOUR FIELD CONVERTER is the world's most sophisticated and accurate standards converter and is the accepted new standard for the industry.



- ★ Only converter in the world with four fields of digital storage
- ★ Bi-directional conversion between PAL, SECAM, NTSC and PAL-M and any other internationally recognized TV standards
- ★ No flicker on horizontal edges
- ★ Virtually transparent conversion
- ★ Minimum judder on vertical and horizontal motion
- ★ No loss of detail on pans
- ★ Significant noise reduction
- ★ Accepts and repairs signals which are out of specification
- ★ Soft failure modes
- ★ Price competitive to all other similar but less sophisticated systems



ACE is manufactured under licence from the BBC which uses ACE exclusively for standards conversion.

ACE was selected as the most suitable equipment for news and sports coverage of the World Cup by Radio Television España.

McMichael Limited is an advanced electronics company with over 60 years experience in the development and manufacture of state-of-the-art electronics equipment and systems.

McMICHAEL ACE CONVERTER

Marketing Dept.
McMichael Limited, Sefton Park, Stoke Poges, Slough, SL2 4HD England
Telephone: Fulmer (02816) 2777 Ext. 4004 Telex: 849212

McMICHAEL

Circle 176 on Reader Service Card

www.americanradiohistory.com

NEUMADE PRODUCTS CORP.
Box 568, Scarsdale, NY 10583
914 725-4900
Audio carts, sprocketed magnetic film, empty reels & carts, tape loaders, tape timers & rewinders; tape storage units.

NEUTRIK PRODUCTS ★
77 Selleck St., Stamford, CT 06902
203 348-2121
Graph recorder; audio connectors.

RUPERT NEVE, INC. ★
Berkshire Industrial Park, Bethel, CT 06801
203 744-6230
Mic mixers; portable, mono & stereo, automated & audio for TV mixing consoles; digital audio editors; audio line amps, DAs; facility turnkey installations.

NEW ENGLAND SATELLITE SYSTEMS ★
45 Drury Ln., Worcester, MA 01609
617 757-2531
Transportable satellite earth stations.

NEWSCAN/McINNIS SKINNER & ASSOC. ★
6529 Classen Blvd., Oklahoma City, OK 73116
405 848-4246
TV newsroom computers; character generators, digital art/paint systems, weather symbol inserters.

NEXUS PRODUCTIONS, INC. ★
10 E. 40 St., New York, NY 10016
212 679-2180
Video post-production facility.

NIDUS BROADCAST SYSTEMS ★
4090 Youngfield St., Wheat Ridge, CO 80033
800 525-0331
Computer automation controllers, complete program automation systems, radio & TV business automation hardware.

NIKKO AUDIO
320 Oser Ave., Hauppouge, NY 11788
516 231-8181
Audio preamps & power amps; equalizers & filters; mono & stereo consoles; turntables; tuners; receivers; integrated amps; time delay synthesizers; cassette decks.

FRED A. NILES COMMUNICATIONS, INC. ★
1058 W. Washington Blvd., Chicago, IL 60607
312 738-4181
Studio & mobile teleproduction facilities; video post-production facility.

NORTH AMERICAN VIDEO & BROADCASTING, INC. ★
1726 Cherry St., Philadelphia, PA 19103
215 854-0900
Studio & mobile teleproduction facilities; video post-production facility.

NORTHEAST PRODUCTIONS ★
Wilkes-Barre/Scranton Int'l Airport, Avoca, PA 18641
800 233-4777
Mobile teleproduction facility; video post-production facility.

NORTH HILLS ELECTRONICS, INC. ★
Glen Cove, NY 11542
516 671-5700
Video filters; signal multiplexers. RF power dividers; microwave STLs; hum bucking coils.

NORTH WIND POWER CO., INC. ★
Box 556, Moretown, VT 05660
802 496-2955
Wind energy systems; lead-acid batteries & chargers; generators, inverters & converters; towers & masts.

NORTHWEST COMMUNICATIONS, LTD. ★
5381 48 Ave., Delta, BC V4K 1W7, Canada
604 946-1146
Studio & mobile teleproduction facilities; video post-production facility.

NORTHWEST TELEPRODUCTIONS, INC. ★
4455 W. 77 St., Minneapolis, MN 55435
612 835-4455
Studio & mobile teleproduction facilities; video post-production facility.

NORTON CO./SPD ★
16624 Edwards Rd., Box 7500, Cerritos, CA 90701
213 926-0545
Ladder fall prevention system.

NORTRONICS CO., INC. ★
8101 Tenth Ave. N., Minneapolis, MN 55427
612 545-0401
Audio & video replacement heads, head cleaners & evaluators; alignment & tension gauges; bulk erasers; audio tape cleaners & evaluators; splicing blocks, tape. Manual master control switchers.

NORTRONICS, INC., RECORDER CARE DIV. ★
8101 Tenth Ave. N., Minneapolis, MN 55427
612 540-8680
Audio test tapes; tape head cleaners; replacement ATR heads; splicing block & tape; head degaussers, bulk erasers; VCR head cleaners; alignment gauges.

N.O.V.A. CORP. ★
5801 Uplander Way, Culver City, CA 90230
213 641-2046
Video cleaners, evaluators.

N-PRO ★
10022 Hazelwood Dr., Oregon City, OR 97045
503 656-5500
Hydraulic ENG pneumatic masts.

NTI AMERICA, INC. ★
1680 N. Vine St., Ste. 202, Los Angeles, CA 90028
213 462-8945
Digital video test signal generators; color time coder; digital still store.

FRED A. NUDD CORP.
1743 Rt. 104, Box 475, Ontario, NY 14519
315 524-2531
AM antennas; towers & masts, tower hardware & construction equipment; engineering consultant.

NURAD, INC. ★
2165 Druid Park Dr., Baltimore, MD 21211
301 462-1700
Intercity, portable ENG & airborne microwave, central receivers; remote control systems; microwave STLs; microwave antennas. Facility turnkey installations; engineering consultant.

NYTONE ELECTRONICS CORP.
2424 S. 900 West, Salt Lake City, UT 84119
801 973-4090
16/35 mm telecine projectors, optical multiplexers, telecine color correctors; video signal multiplexers.

N-Z VIDEO SYSTEMS
513 Greer Ave., Sikeston, MO 63801
314 471-7145
Facility turnkey installations; mobile vehicle construction.

OAK COMMUNICATIONS, INC., CATV DIV. ★
100 S. Main St., Crystal Lake, IL 60014
815 459-5000
Decoders, converters & addressable systems for STV, PTV & CATV.

O'CONNOR ENGINEERING LABS, INC. ★
100 Kalmus Dr., Costa Mesa, CA 92626
714 979-3993
Tripods, heads & pedestals.

★ MEANS IT'S VERIFIED

ODETICS, INC. ★
1380 S. Anaheim Blvd., Anaheim, CA 92805
714 774-5000
Fixed head digital audio recorders; cassette player/recorders, duplicators; replacement heads, cassettes, bulk erasers; dynamic & condenser mics, booms. Video cassettes; digital, master/slave clocks, timers.

OKI ELECTRIC OVERSEAS CORP. ★
1 University Plaza, Hackensack, NJ 07601
201 646-0011
Digital standards converters; satellite receive only earth stations.
SEE AD PG. 188

OKTEL CORP.
490 Division St., Campbell, CA 95008
408 374-1811
Slow motion disc action recorders & video animation controllers.

OLD DOMINION BROADCAST ENG. SVCS. ★
1101 Front St., Richmond, VA 23222
804 321-4506
Telco interface equipment; equipment rental, facility turnkey installations, studio set design services.

OLESEN
1535 Ivar Ave., Hollywood, CA 90028
213 461-4631
Lamps, fixtures, scenery, rigging, lighting stands; lighting control boards & dimmer packs; diffusion, efx material; ac cables & connectors.

OMNI SPECTRA, INC. ★
See listing for M/A-COM VIDEO SYSTEMS, INC.

www.americanradiohistory.com

Barco can give them to you, brilliantly. Thanks to our new **American Standard Phosphors**, we can also give you increased compatability with broadcast network colorimetry and precise color reproduction to tolerances of ±0.005. But Barco also gives you freedom of choice because we can still offer you E.B.U. chromaticity coordinates, if you prefer.

Whatever Barco unit you choose, rest assured you'll get all the versatile Barco features you've heard about. Features like modular construction, delta and inline tubes, as well as different screen sizes and resolutions to choose from. And those are just some of the reasons why Barco has become the standard of the industry, there are plenty more.

Check out our numbers.

AMERICAN STANDARD PHOSPHORS			E.B.U. PHOSPHORS		
Delta	X	Y	Delta	X	Y
Red	0.630	0.340	Red	0.640	0.330
Green	0.310	0.595	Green	0.290	0.600
Blue	0.155	0.070	Blue	0.150	0.060

Best of all, when you buy Barco you're buying one of the most comprehensive customer support programs in the industry, backed by Rohde & Schwarz.

Barco Color Monitors. When it has to be right on the money. For complete details, contact us at 14 Gloria Lane, Fairfield, N.J. 07006. Phone (201) 575-0750. Telex 13310.

BARCO HELPS YOU REMAIN TRUE TO YOUR COLORS.

Rohde & Schwarz Sales Co. (U.S.A.) Inc.

Circle 177 on Reader Service Card

www.americanradiohistory.com

ONAN CORP. ★
1400 73 Ave. NE, Minneapolis, MN 55432
612 574-5000
Power generators.

ONE PASS FILM AND VIDEO ★
1 China Basin Bldg., San Francisca, CA 94107
415 777-5777
Audio/video post-production facility; stage, studio rentals, set design services.

OPAMP LABS, INC. ★
1033 N. Sycamare Ave., Las Angeles, CA 90038
213 934-3566
Mic mixers; portable, mono & stereo, audio for TV mixing consoles; graphic equalizers, reverb & noise reduction. Preamps, line & monitor amps, amp power supplies; VU meters; rotary & slide attenuators. Video DAs & pulse amps.

OPRYLAND PRODUCTIONS ★
2806 Opryland Dr., Nashville, TN 37214
615 889-6840
Studio & mobile teleproduction facilities; post-production facility.

OPTIMA ENCLOSURES, DIV. SCIENTIFIC-ATLANTA INC. ★
2166 Mauntain Industrial Blvd., Tucker, GA 30084
404 939-6340
Racks, equipment enclosures, cabinets.

OPTIMUS ★
161 E. Grand, Chicago, IL 60611
312 321-0880
Video teleproduction & post-production facilities.

ORBAN ASSOCIATES, INC. ★
645 Bryant St., San Francisco, CA 94107
800 227-4498
AM & FM compressor/limiters; graphic & parametric equalizers & filters; special effects & mechanical reverb; FM processors & stereo generators.
SEE AD PG. 35,186

ALLEN OSBORNE ASSOC. ★
5195 N. Douglas Fir Rd., Calabasas, CA 91320
213 888-2772
Telescoping & pneumatic towers & masts.

OSRAM SALES CORP. ★
Box 7062, Jeanne Dr., Newburgh, NY 12550
914 564-6300
HMI Lamps & lighting fixtures.

OTARI CORP. ★
2 Davis Dr., Belmont CA 94002
415 592-8311
Open reel portable, studio & multitrack ATRs; tape duplicators, loaders; videocassette loaders.
SEE AD PG. 13

PACE WIRE & CABLE CORP. ★
3590 Oceanside Rd., Oceanside, NY 11572
516 678-2275
Wire and cable.

PACIFIC COAST VIDEO ★
635 1/2 Chapala, Santa Barbara, CA 93101
805 965-5015
Teleproduction facility; video post-production facility.

PACIFIC RECORDERS & ENGINEERING CORP. ★
11100 Raselle St., San Diega, CA 92121
714 453-3255
Stereo audio consoles; single deck cart player/recorders & phase control matrixing; audio DAs.

PACIFIC VIDEO ★
809 N. Cahuenga Blvd., Las Angeles, CA 90038
213 462-6266
Studio & mobile teleproduction facilities; video post-production facility.

PACKAGED LIGHTING SYSTEMS, INC. ★
Box 285, Grant St., Walden, NY 12586
914 778-3515
Lighting stands, rigging, dimmer packs; quartz fixtures, cyc lighting & power systems.

PAKO CORP. ★
6300 Olsan Memarial Hwy., Minneapolis, MN 55440
612 540-6300
Film processors; slide mounting systems.

W.A. PALMER FILMS, INC. ★
611 Howard St., San Francisco, CA 94105
415 986-5961
Telecines & video/film recording cameras.

PANASONIC INDUSTRIAL CO. ★
1 Panasonic Way, Secaucus, NJ 07094
201 348-7000
Field, ENG/EFP, single tube, single piece & monochrome cameras; effects generators, colorizers, chromakeyers & downstream keyers; editor/controllers, SMPTE time code generators & readers; sync & color bar generators; pulse amps, video DAs; monochrome, NTSC, RGB, dc portable monitors & video projectors; videotape & cassettes.
SEE AD PG. 107
Field Offices:
CA 6550 Katella Ave., Cypress 90630 . . . . . 714 895-7200
GA One Meca Way, Norcross 30093 . . . . . 404 923-9700
IL 425 E. Algonquin Rd., Arlington Heights 60005 . . 312 364-7900
NJ 50 Meadowland Parkway, Secaucus 07094 . . . . . 201 348-7000
TX 1825 Walnut Hill Lane, Irving 75062 . . . . . 214 258-6400
Refer to Reps/Distributors section

PANDUIT CORP. ★
17301 Ridgeland Ave., Tinley Park, IL 60477
312 532-1800
Cables & connectors.

PARSONS MFG. CORP. ★
1055 O'Brien Dr., Menlo Park, CA 94025
415 324-4726
Foam insert transportation cases.

PD MAGNETICS ★
Box 4499, Wilmington, DE 19807
302 999-4253
Audio cassettes; videotape.

PEIRCE-PHELPS, INC., VIDEO SYSTEMS DIV. ★
2000 N. 59 St., Philadelphia, PA 19131
215 879-7171
Facility turnkey installations & mobile vehicle construction.

PENNY & GILES ★
1640 Fifth St., Santa Manica, CA 90401
213 393-0014
Audio rotary & slide attenuators.

PENTAGON INDUSTRIES, INC. ★
4751 N. Olcatt, Chicaga, IL 60656
312 867-9200
Audio cassette player/recorders, changers & duplicators; alignment gauges; tape rewinders.

PEP, INC. ★
25 W. 54 St., New Yark, NY 10019
212 246-2490
Nicad batteries & chargers; ac adaptors.

PERROTT ENGINEERING LABS, INC. ★
7201 Lee Hwy., Falls Church, VA 22046
703 532-0700
Nicad, silver-zinc & lead-acid batteries & chargers; quartz crystals.

PETERS PRODUCTIONS, INC.
9590 Chesapeake Dr., San Diego, CA 92123
415 565-8511
Audio post-production facility & recording studio; syndicated TV programming, promotions & advertising.

★ MEANS IT'S VERIFIED

PHASECOM CORP. ★
6365 Arizona Circle, Los Angeles, CA 90045
213 641-3501
Heterodyne processors; modulators & demodulators; programmable videocassette automation systems; HRC head end equipment.

PHASE TWO VIDEO
609 W. 50 St., New York, NY 10019
212 246-5940
Video post-production facility.

PHELPS DODGE COMMUNICATIONS CO. ★
Route 79, Marlboro, NJ 07746
201 462-1880
RF switches & power dividers; FM & communications antennas & tuning units; solid core & foam dielectric cable.
SEE AD PG. 163
Field Offices:
AZ 115 E. Watkins St., Phoenix 85004 . . . . . 602 252-8058
CA 1420 Monterey Pass Rd., Monterey Pk 91754 . . . . . 213 268-9330
FL Route 44, Leesburg 32748 . . . . . 904 787-9200

PHILADELPHIA RESINS CORP. ★
20 Commerce Dr., Montgomeryville, PA 18936
215 855-8450
Electrically transparent antenna guys.
SEE AD PG. 25

PHILIPS BROADCAST GROUP
See listing for CENTRAL DYNAMICS CORP.

www.americanradiohistory.com

STUDIO OR STADIUM, FUJINON'S NEW BCTV LENSES PLAY ALL THE ANGLES.

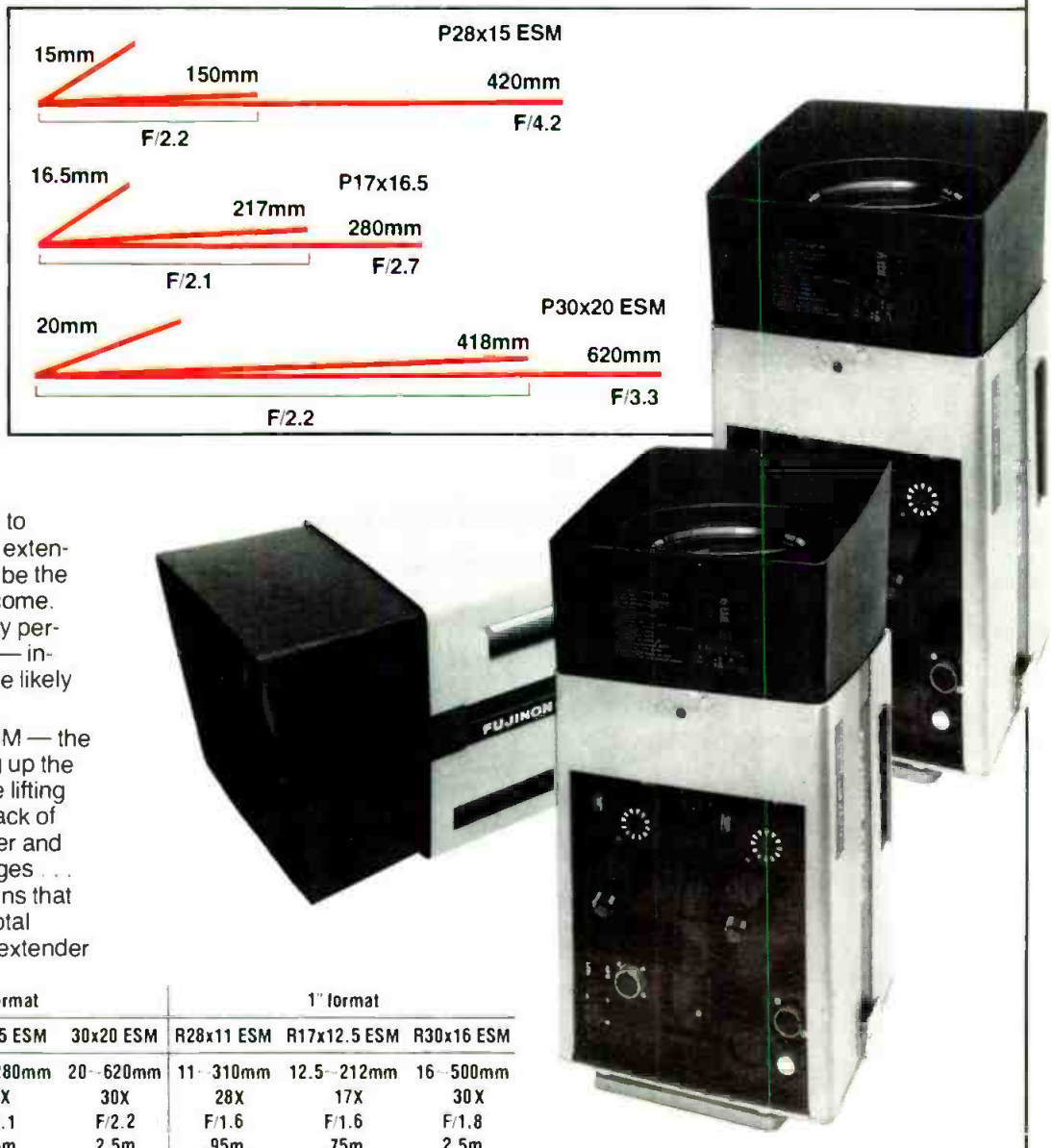
From super-wide to ultra-tele, in the studio or the stadium, Fujinon BCTV lenses are the clear winners . . . from any angle.

NEW. Fujinon's P28x15 ESM — the super studio lens. It gives you a wall-to-wall 15mm wide angle and a maximum aperture of F/2.2 which is maintained out to ten times. Even at 420mm, the F/4.2 allows you to keep your lighting levels reasonable. And for the tightest shots, the built-in 1.7X extender takes you to 714mm. Naturally, it has a built-in diascope for near instant computer setup. But range and speed do not reveal the incredibly sharp, bright, high contrast image the new 28X delivers. Its superior resolution and color performance place it ahead of any lens in its class.

NEW. Fujinon's P17x16.5 ESM — the standard studio lens. With a zoom range from 16.5 to 280mm, an aperture which will remain flat at F/2.1 out to 217mm and built-in 1.5X and 2X extenders, here's the lens destined to be the industry workhorse for years to come. Simply put, it offers virtually every performance and operating feature — including built-in diascope — you're likely to need.

Not new. Fujinon's P30x20 ESM — the super field lens. Whether picking up the clearest shot of the space shuttle lifting off or a concert stage from the back of the top balcony, it goes out farther and flatter to deliver outstanding images . . . especially under lighting conditions that leave other lenses in the dark. Total zoom range, with the built-in 2X extender is an incredible 20 to 1240mm. The F/2.2 aperture remains flat from 20 to 418mm — and at 620mm is giving you F/3.2. No wonder the 30X lens is acknowledged by the industry as the finest field zoom available.

For more information on the newest and finest BCTV lenses, and why they are the best performance investment for your new or existing cameras, contact Fujinon. Large format zoom lenses are another reason why the world sees itself more clearly through the eyes of Fujinon.



Specifications:	1¼" format			1" format		
	P28x15 ESM	17x16.5 ESM	30x20 ESM	R28x11 ESM	R17x12.5 ESM	R30x16 ESM
Focal Length	15–420mm	16.5–280mm	20–620mm	11–310mm	12.5–212mm	16–500mm
Zoom Ratio	28X	17X	30X	28X	17X	30X
Max. Aperture	F/2.2	F/2.1	F/2.2	F/1.6	F/1.6	F/1.8
M.O.D.	.95m	.75m	2.5m	.95m	.75m	2.5m
Range Extender	1.7X	1.5X, 2X	2X	1.7X	1.5X, 2X	2X

FUJINON

FUJINON INC. 672 White Plains Road, Scarsdale, New York 10583
(914) 472-9800 Telex: 131642

118 Savarona Way, Carson, California 90746
(213) 532-2861 Telex: 194978

Circle 178 on Reader Service Card

www.americanradiohistory.com

THE PHOEBUS CORP.
2800 3 St., San Francisco, CA 94107
415 550-0770
Lamps, quartz fixtures.

PHILIPS TEST & MEASURING INSTRUMENTS, INC. ★
85 McKee Dr., Mahwah, NJ 07430
201 529-3800
TV exciters; stereo generators, modultors; demodulators, RF & video test signal generators; automatic VITS analyzers; waveform monitors, vectorscopes, delayed sweep scopes, oscilloscopes & logic analyzers.
SEE AD PG. 171

Field Offices:
CA 12882 Valley View St., Ste. 9, 92645 . . . . . 714 898-5000/213 594-8741
CA 489 Valley Way, Milpitas 95035 . . . . . 408 946-6722
MA 21 Olympia Dr., Woburn 01801 . . . . . 617 935-3972
CN 2375 Steeles Ave., W., Unit 126, Downsview Ontario M3J 3A8 . . . . . 416 665-8470
CN 130 Albert St., Ste. 1005, Ottawa, Ontario K1P 5G4 . 613 237-3134
CN 5930 Cote de Liesse, Montreal PQ H4T 1E1 . . . . 514 342-9180
Refer to Reps/Distributors section

STROBEGUARD®

HIGH INTENSITY OBSTRUCTION LIGHTING SYSTEMS* FOR TELEVISION AND RADIO TOWERS AND SIMILAR SKELETAL STRUCTURES.

EG&G

TECHNICAL PRODUCTS GROUP — BEDFORD DIVISION
35 CONGRESS ST., SALEM, MASSACHUSETTS 01970
TEL: (617) 745-3200
ATTENTION: GEORGE MANDEVILLE, PRODUCT MANAGER

*FAA APPROVED as meeting or exceeding the requirements of Advisory Circular AC 150/5345-43 and FAA/DoD Specifications L-856 plus FAA AC 70/7460-1

Circle 179 on Reader Service Card

PHOENIX VIDEO CENTER ★
5015 N. 6 St., Phoenix, AZ 85012
602 263-8866
Studio & mobile teleproduction facilities; video post-production facility.

PINZONE COMM. PRODUCTS, INC. ★
10142 Fairmount Rd., Newbury, OH 44065
304 296-4493
Receive only satellite earth stations, satellite receivers; status, alarm indicators.

PLASTIC REEL CORP. OF AMERICA ★
475 Boulevard, Elmwood Park, NJ 07407
201 796-6600
Empty audio & video reels, carts & containers; foam insert & rack mounting transportation cases; tape storage systems; equipment rental service.

POLARAD ELECTRONICS, INC. ★
5 Delaware Dr., Lake Success, NY 11042
516 328-1100
AM, FM & TV field intensity meters; transceiver test sets; spectrum analyzers; RF signal generators.

CONSTANTINE N. POLITES & CO. ★
833 Guenther Ave., Yeadon, PA 19050
215 626-4643
Hardware for lighting grids; tubes & clamps for tower construction.

POLYCOM TELEPRODUCTION ★
201 E. Erie St., Chicago, IL 60611
312 337-6000
Studio & mobile teleproduction facilities; video post-production facility.

POLYLINE CORP.
1233 Rand Rd., Des Plaines, IL 60016
312 298-5300
Audio cassettes; empty audio & video reels, carts & containers.

PORTABLE ENERGY PRODUCTS, INC. ★
1875 S. Pearl St., Denver, CO 80210
303 778-8616
Nicad & lead-acid batteries & chargers.

PORTA-PATTERN TELECOMMUN. INDS. LTD. ★
Box 38945, 6822 Santa Monica Blvd., Los Angeles, CA 90038
213 461-3561
Optical test images, charts & slides.

THE POST GROUP ★
6335 Homewood Ave., Los Angeles, CA 90028
213 462-2300
Video post-production facility.

POTOMAC INSTRUMENTS, INC. ★
932 Philadelphia Ave., Silver Spring, MD 20910
301 589-2662
Antenna monitors; AM, FM & TV field intensity meters; RF test signal generators, phase meters; audio test signal generators; harmonic distortion, IM & wow & flutter meters; log printers, automatic radio monitors, alarm indicators.
SEE AD PG. 20

POWER-OPTICS, INC. ★
341 Main St., Collegeville, PA 19426
215 539-5300

www.americanradiohistory.com

Remote control systems; color monitor calibrators.

PRACTICAL TECHNOLOGY ★
12 Village Ctr., Box 449, Carmel Valley, CA 93924
408 659-3128
Logic analyzers.

PRECISION ECHO ★
485 E. Middlefield Rd., Mountain View, CA 94043
415 961-7145
Video animation controllers, compressor/positioners; video disc recorders.

PRIME TIME POST ★
6410 Santa Monica Blvd., Los Angeles, CA 90038
213 464-7151
Video post-production facility.

PROCART ★
7012 27 St. W., Tacoma, WA 98466
206 565-2301
Audio tape cartridges.

PRODELIN, INC. ★
Box 100, Claremont, NC 28610
800 438-9706
Satellite antennas; flexible transmission line; microwave antennas, reflectors & waveguides.

PRODUCERS COLOR SERVICE ★
24242 Northwestern Hwy., Sauthfield, MI 48075
313 352-5353
Studio & mobile teleproduction facilities; video post-production facility.

PRODUCERS VIDEO CENTER ★
Crown Center, 2450 Grand, Ste. 400, Kansas City, MO 64108
816 274-8335
Teleproduction & post-production facilities.

PROFESSIONAL VIDEO SERVICES ★
206 E. 29 St., New York, NY 10016
212 683-3636
Studio & mobile teleproduction facilities; video post-production facility.

PROTECH AUDIO CORP. ★
Flowerfield Bldg. 1, St. James, NY 11780
516 584-5855
Stereo, mono & TV audio consoles; ALC, AGC amps, AM compressor/limiters; hardwired intercoms; telco preamps, line & monitor amps, audio DAs, amp power supplies; slide attenuators; studio furniture.

PTS CORP. ★
5233 S. Hwy. 37, Bloomington, IN 47401
812 824-9331
Hum bucking coils; converter/amp rebuilding.

PYRAMID VIDEO, INC. ★
National Press Building, Room 340, Washington, DC 20045
202 783-5030
TV production and transmission facilities.

QEI CORP. ★
Route 73, Kresson, NJ 08053
609 767-8052
FM transmitters, exciters & SCA equipment; RF power amps; stereo generators; remote control equipment; modulation monitors.

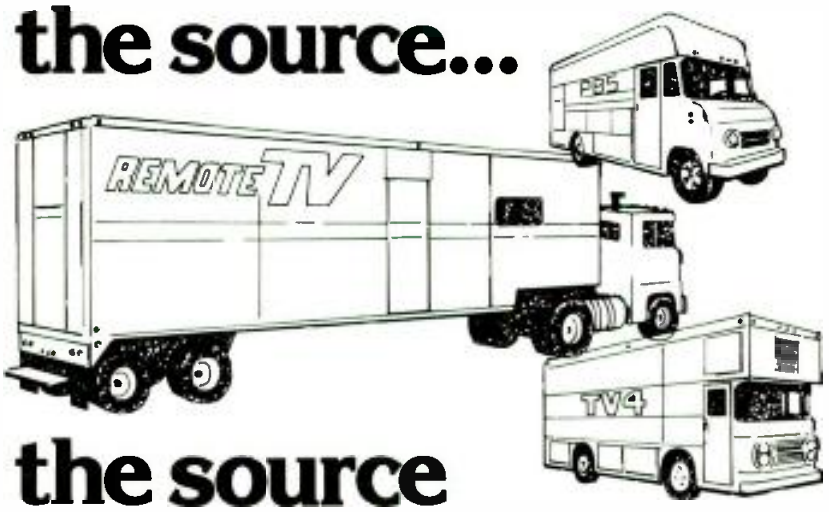
QSC AUDIO PRODUCTS, INC. ★
1926 Placentia Ave., Costa Mesa, CA 92627
714 645-2540
Monitor & power amps.

★ MEANS IT'S VERIFIED

QSI SYSTEMS, INC. ★
12 Linscott Rd., Box 2176, Woburn, MA 01888
617 938-1403
Character generators; SID, countdown, video slate board & color bar generators; video DAs; demodulators; timers; engineering consultation.
SEE AD PG. 164

Q-TV ★
33 W. 60 St., New York, NY 10023
212 765-4200
Monitor based, scroll, keyboard entry & ENG/EFP teleprompters.

When you cover the action from the source...



the source for mobile studios should be Gerstenslager.

In a van or trailer, your most modern, best equipped studio could be your Gerstenslager. It all starts when you tell us what you need. The job to be done. Then we'll work with your engineers and principal equipment suppliers. Develop the plans. Detail placement of every piece of equipment, generators, wiring, climate control, consoles. Exactly as you want it. Then, build the unit from the frame up. A studio on wheels that is actually a dependable broadcasting station comparable to conventional studio systems.

How we do it with examples of work we have done for others is included in this brochure. It's yours for the asking. Write or call: (216) 262-2015.

GERSTENSLAGER
The Gerstenslager Company, Wooster, Ohio 44691

Circle 180 on Reader Service Card

www.americanradiohistory.com

QUAD-EIGHT ELECTRONICS ★
11929 Vose St., N. Hollywood, CA 91605
213 764-1516
Mono, stereo, automated & audio for TV mixing consoles; digital audio editors; AM compressor/limiters, parametric & graphic equalizers; digital & analog reverb. Preamps, line amps & LED meters.

QUANTUM AUDIO LABS ★
1905 Riverside Dr., Glendale, CA 91201
213 841-0970
Mic mixers; portable, mono & stereo, & TV audio mixing consoles.

QUANTA CORP. ★
2440 S. Progress Dr., Salt Lake City, UT 84119
801 974-0992
Character generators, titlers, bit pad digitizers; radio & TV newsroom computers; tape cleaners, evaluators.
SEE AD PG. 195
Field Offices:
CA 3566 Sunnydale Ct., San Jose 95117 . . . . . 408 985-8888
CT 57 North St., Ste. 122B, Danbury 06810 . . . . . 203 797-1179
GA 3566 Old Chamblee-Tucker Rd., Atlanta 30340 . . . . . 404 493-3913
OH 16006 Waterloo Rd., Cleveland 44110 . . . . . 216 692-3410
OK 1535 So. Memorial Dr. #124, Tulsa 74112. . . . . 918 627-4151
UT 2440 So. Progress Dr., Salt Lake City 84119 . . . . . 801 974-0992

QUICK-SET, INC. ★
3650 Woodhead Dr., Northbrook, IL 60062
312 498-0700
Tripods, heads, pedestals & dollies.

RACAL-DECCA CANADA, LTD. ★
71 Selby Rd., Brampton, Ontario, Canada L6W 1K5
416 457-8720
Lighting transformers; tower guy insulators.

RADIO ARTS, INC.
210 N. Pass Ave., Burbank, CA 91505
800 423-2840
Syndicated radio programming.

RADIOCOM ★
335 E. 70 St., New York, NY 10021
212 794-9702
Radio business automation hardware.

RADIO SYSTEMS ★
5131 W. Chester Pike, Edgemont, PA 19028
215 356-4700
Phono preamps; monitor & power amps, audio DAs; AM transmitters; timers; facility turnkey installations.

RADIOTECHNIQUES
402 Tenth Ave., Haddon Heights, NJ 08035
609 546-1841
Engineering consultation; earth station site selection.

RADMAR, INC. ★
1282 Old Skokie Rd., Highland Park, IL 60035
312 831-9000
Lead-acid batteries, chargers; 16/35 mm telecine projectors.

RAINBO PRODUCTS ★
404 N. River, Ypsilanti, MI 48197
313 482-6591
Lighting color changer.

RAM, INC. ★
FAA Bldg. 6301 34 Ave. S., Minneapolis, MN 55450
612 726-9059
Weather information services.

RAMKO RESEARCH ★
11355 A Folsom Blvd., Rancho Cordova, CA 95670
916 635-3600
Mic mixers; portable & mono & stereo studio consoles; single- & multi-deck cart player/recorders; cassette player/recorders; replacement heads; carts, tape loaders; turntables, phono preamps; AM compressor/limiters; speakers; telco preamps, line, monitor & power amps, audio DAs, amp power supplies; LED meters & audio routers.
SEE AD PG. 5
Refer to Reps/Distributors section

RAMSA (PANASONIC PROFESSIONAL AUDIO PRODS.)
1 Panasonic Way, Secaucus, NJ 07094
201 348-7470
Portable & mono & stereo studio consoles; dynamic & electret/condenser mics; monitor, power amps.
SEE AD PG. 8-9

RAMTEK CORP. ★
2211 Lawson Ln., Santa Clara, CA 95050
408 988-2211
Digital art/paint systems; monochrome & RGB monitors.

RANGERTONE RESEARCH, INC.
509 Madison Ave., New York, NY 10022
212 753-5430
Sprocketed magnetic film transports; replacement heads; preamps & line amps; VU meters; video replacement heads, VTR rebuilding service; 16/35 mm telecine projectors, optical multiplexers.

RANK PRECISION INDUSTRIES, INC. ★
411 E. Jarvis Ave., Des Plaines, IL 60018
312 279-7720
Solid-state telecines, 16/35 mm telecine projectors, 35 mm slide projectors, telecine color correctors, sprocketed magnetic film transports.
Field Offices:
CA 13340 Saticoy, Unit F, N. Hollywood 91605 . . . . . 213 765-7265
NY 260 N. Rt. 303, W. Nyack 10994. . . . . 914 353-1914

RCA AMERICAN COMMUNICATIONS, INC. ★
400 College Rd. E., Princeton, NJ 08540
609 734-4069
Satellite transmission services; post-production services.

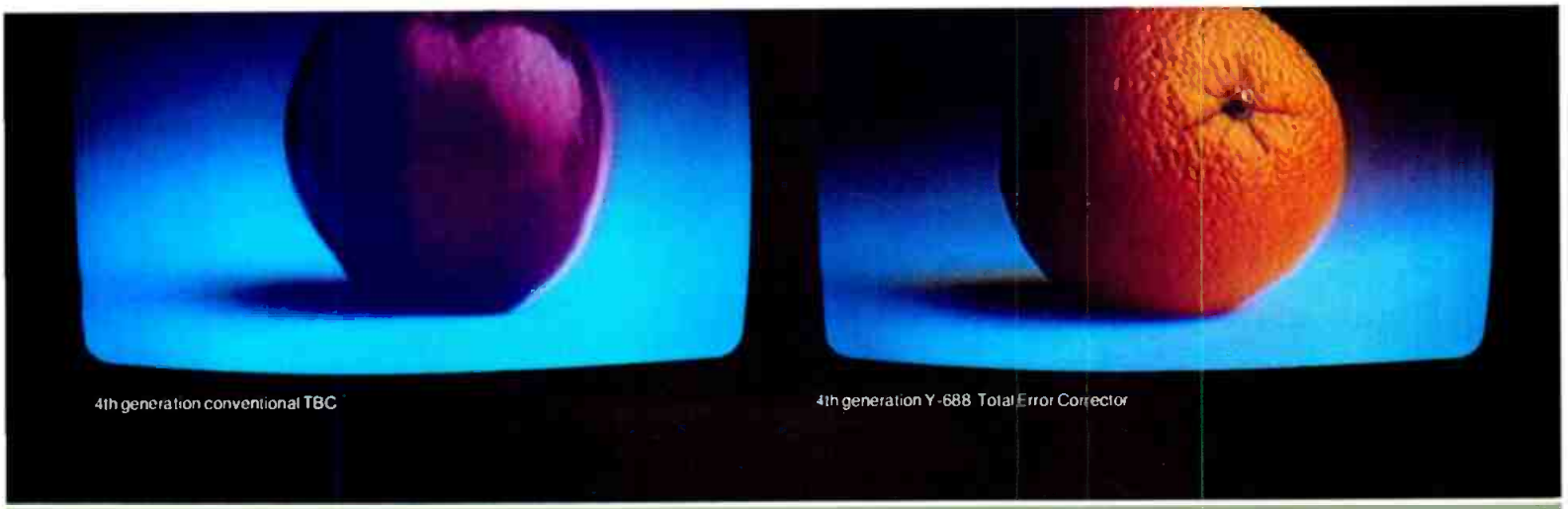
RCA COMMERCIAL COMM. SYSTEMS DIV. ★
Front & Cooper Sts., Camden, NJ 08102
609 338-3000
Studio, field, ENG/EFP & single-piece cameras. Quad & one-inch VTRs; video cart automation systems; replacement & rebuilt heads & VTR rebuilding services; VTR slow motion controllers; TBCs. Telecine cameras, 16/35 mm telecine projectors, optical multiplexers & telecine color correctors. Video editor/controllers & multisource editors. AM, FM, UHF & VHF transmitters; FM & TV exciters; FM & TV (HP & CP) antennas. Facility turnkey installations & mobile vehicle construction.
SEE AD PG. 78-79
Field Offices:
CA E. Mehaffey, 330 Primrose Rd., Ste. 304, Burlingame 94010. . . . . 415 343-2741
CA R. Abbenante, O.G. Bjerke, D. Diels, 4040 Vineland Ave., Ste. 204, Studio City 91604. . . . . 213 468-4081
CO J. Butts, 777 S. Wadsworth Blvd., Ste. 205, Iron Gate IV, Lakewood 80226. . . . . 303 986-1521
FL R. Giles, 3900 RCA Blvd., Palm Beach Gardens 33410 . . . . . 305 622-1100
GA R. Greaves, P. Higginbotham, J. Kelley, 3395 N.E. Expy., RCA Bldg. Atlanta 30341 . . . . . 404 452-2340
IL R. Yokes, 120 W. Eastman St., RCA Ste. 303, Arlington Heights 60004 . . 312 255-2202
IN J. Ayers, J. Kosiba, 9240 N. Meridian St., RCA Ste. 102, Indianapolis 46260 . . . . . 317 267-6395
KS H. Craig, 8900 Indian Creek Pkwy., RCA Ste. 410, Overland Park 66210 . . . . . 913 642-3185
MA P. Taylor, 40 William St., Wellesley Office Park, Wellesley 02181 . . . . . 617 237-6050
MI G. Schmidt, 16400 W. Twelve Mile Rd., RCA Ste. 215, Southfield 48076. . . . . 313 569-5880
MN D.G. Schulte, 4601 Excelsior Blvd., RCA Ste. 305, Minneapolis 55416 . . . . . 612 920-6395/6
NC C. Patterson, 1515 Mockingbird Lane, RCA Ste. 211, Charlotte 28209. . . . . 704 525-4870
NJ M.S. Hyman, W.A. Ritchey, Front & Cooper Sts., RCA Bldg. 2-2, Camden 08102 . . . . . 609 338-2020/3693
NY D. Mewhinney 212 930-4654; T. Moore 212 930-4653/6; R. Varda 212 930-4651; 1180 Ave. of the Americas, RCA 22nd Floor, New York 10036 . . . . . 212 930-4654
PA C. Koriwchak, 924 N. Washington Rd., Malanos Bldg., McMurray 15317 . . . . . 412 941-5570
TX R. Edenson, E. Hoff, B. Laughlin, R. Phillips, 17000 Dallas Pkwy., RCA Ste. 102, Dallas 75248. . . . 214 931-1683
VA R. Dongelewicz, R. Parkhill, 1901 N. Moore St., Arlington 22209 . . . . . 703 558-4233
WA P. Lines, 1818 Westlake Ave., North, RCA Ste. 222, Seattle 98109 . . . 206 285-2375

RCA D&SPD ★
2000 Clements Bridge Rd., Deptford, NJ 08096
609 853-2243
RF cable, connectors; vacuum tubes; solid state components; surge protectors.

RCA ELECTRO OPTICS & DEVICES ★
New Holland Ave., Lancaster, PA 17604
717 397-7661
Camera pickup tubes & RF power tubes.

RCA SERVICE CO. ★
Dept. 2615, Bldg. 204-2, Rt.38, Cherry Hill, NJ 08358
609 338-5924
Facilities design & engineering; TV antenna installation services.

www.americanradiohistory.com



NO COMPARISON

Comparing video from a conventional TBC to video from a Y-688[32] Total Error Corrector is like comparing apples to oranges. A time base corrector, as the name implies, corrects timing errors. The Y-688[32] Total Error Corrector corrects timing errors and virtually all VTR induced errors.

The major cause of video quality loss in 3/4 VTR's is inherent in the color under process. This process separates the input color video signal into its luma and chroma components, converts the chroma frequency for recording and playback and recombines the luma and chroma for color video output. The worst part is that this quality loss is cumulative, in that it is compounded with each pass through a VTR or conventional TBC.

Total Error Correction

The Y-688[32] TEC is designed specifically to overcome multiple generation quality loss from color under VTR's. The Y-688[32] TEC utilizes "dub" (Y-688) input and output as well as encoded video. The "dub" mode allows processing of component (Y-688) video bypassing the separation, frequency conversion and recombination cycle. "Dub" signals processed through the Y-688[32] TEC are better than encoded video signals because they contain more information and are less degraded.

The Y-688[32] TEC also utilizes advanced signal processing techniques, some manufactured under exclusive license from Faroudja Laboratories. These techniques reduce chroma noise by up to 20dB, correct luma/chroma timing automatically, reduce luma noise by up to 10dB, improve chroma rise times, reduce second order ringing and eliminate luma/chroma crosstalk. Some processing is used during each pass through the Y-688, while the balance of the processing is used for the last copy or for broadcast to correct any minor degradations which have occurred.

A Difference You Can See

The improved quality of Y-688[32] TEC video can be seen in first generation playback. It becomes more obvious in successive generations. It is particularly noticeable in third and fourth generations because conventional TBC video has gotten worse with each pass, while fourth generation Y-688[32] TEC video approximates original quality.

The Y-688[32] TEC is simply the most powerful tool available for extending multi-generation quality from color under VTR's.

For more information on the Y-688[32] TEC or an on-site demonstration, circle the reader's card. For immediate response write or call Fortel today.

Fortel Incorporated
6649 Peachtree Industrial Boulevard
Norcross, Georgia 30092-9990
Telephone (404) 447-4422
Telex 804822

Circle 181 on Reader Service Card

FORTEL

Y-688[32]
Total Error Corrector

www.americanradiohistory.com

RCA SOLID STATE DIV. ★
New Holland Ave., Lancaster, PA 17604
717 397-7661
Saticon imaging tubes; UHF, VHF, AM & FM transmission tubes.

R-COLUMBIA PRODUCTS CO., INC. ★
2008 St. Johns Ave., Highland Park, IL 60035
312 432-7915
Hardwired & RF intercoms; dynamic & electret/condenser mics.

REAL RADIO CO. ★
127 Glen Summer Rd., Pasadena, CA 91105
213 795-4900
Syndicated radio programming.

★ MEANS IT'S VERIFIED

THE REAL WORLD TECHNOLOGIES GROUP, INC. ★
3176 Pullman St., Ste. 106, Costa Mesa, CA 92626
714 957-1061
VU & PPM meters & video monitor displays; engineering consultation & mobile vehicle construction.

RECORTEC, INC. ★
475 Ellis St., Mountain View, CA 94043
415 962-0220
Audio/video cassettes, tape cleaners & evaluators; VCRs; videocassette automation systems; parallel interface machine control; timers.

RE:DB CO., DIV. OF PIERCE INDUSTRIES ★
3120 E. Pico Blvd., Los Angeles, CA 90023
213 264-7855
Audio/video replacement & rebuilt tape heads.

REDDING RADIO, DIV. OF SJ INDUSTRIES
Box 344, Fairfield, CT 06430
Telco interface equipment; editing blades.

REES ASSOC., INC. ★
4200 Perimeter Center Dr., Ste. 245, Oklahoma City, OK 73112
405 946-9800
Modular studio sets; facility turnkey installations; engineering consultation; studio, set design, financial services; earth station site selection.

REGISTER DATA SYSTEMS ★
Box 1246, Perry, GA 31069
912 987-2501
Business & traffic computer services and hardware.

R.E. INSTRUMENTS, INC. ★
31029 Center Ridge Rd., Westlake, OH 44145
216 871-7617
Signal multiplexers; stereo generators; fiberoptic transmission systems; modulation monitor, RF test signal generators, harmonic distortion & IM meters, spectrum analyzers, wow & flutter meters.

RE-PLAY VIDEO CARTRIDGE SERVICE ★
328 Meritt Ave., Pittsburgh, PA 15227
412 881-9172
Re-loaded videocassettes.

RESEARCH TECHNOLOGY INT'L (RTI) ★
4700 Chase Ave., Lincolnwood, IL 60646
800 323-7520
Electronic film previewers & editors; hardware & software for film inventory & management; videotape cleaner/evaluators; tape & film timers; studio furniture & storage units; video cable, shipping cases.

REYNOLDS/LETERON ★
6704 Valjean Ave., Van Nuys, CA 91406
213 994-1194
Mechanical character generators, lettering systems & title cards.

RF TECHNOLOGY, INC. ★
145 Woodward Ave., S. Norwalk, CT 06854
203 866-4283
RF amplifiers; intercity, ENG, airborne & central receiver microwave systems; STLs.

RHG ELECTRONICS LAB, INC.
161 E. Industry Ct., Deer Park, NY 11729
516 242-1100
FM transmitters; RF calorimeters; portable & airborne microwave systems; microwave STLs; communications antennas.

RICHMOND SOUND DESIGN, LTD. ★
1234 W. 6 Ave., Vancouver, BC, Canada V6H 1A5
604 734-1217
Mic mixers; portable, mono & stereo & audio for TV mixing consoles; phono preamps; ALC & AGC amps; parametric & graphic equalizers; line, monitor & power amps, amp power supplies; audio post-production facility & recording studio.

RKO TAPE CORP.
3 Fairfield Crescent, West Caldwell, NJ 07006
201 575-8484
Open-reel audio tape & audio cassettes; tape duplicators; half-inch videotape.

RMS ELECTRONICS, INC. ★
50 Antin Pl., Bronx, NY 10462
212 892-6700
Dynamic mics; RF switches; video cable & connectors.

RODELCO ELECTRONICS CORP. ★
365A Comac Rd., Deer Park, NY 11729
516 643-5110
TV & FM translators.

ROH CORP. ★
3603 Clearview Pl. N.E., Atlanta, GA 30340
404 455-7940
Audio preamps; line & monitor amps & DAs; attenuators; intercom systems.
SEE AD PG. 222

ROHDE & SCHWARZ SALES CO. (USA), INC. ★
14 Gloria Ln., Fairfield, NJ 07006
201 575-0750
Monochrome & color monitors; sync generator systems; comb filter decoders; RF demodulators, modulators; VHF transmitters; AM, FM & TV field intensity meters; RF generators; video generators; video noise meters & test generators; VITS & VIR systems.
SEE AD PG. 117

ROSCO LABORATORIES, INC. ★
36 Bush Ave., Port Chester, NY 10573
914 937-1300
Lighting diffusion material, gels & filters; lens cleaning tissue; set design.

ROSNER TELEVISION SYSTEMS, INC. ★
250 W. 57 St., New York, NY 10107
212 246-2850
Facility turnkey installations, engineering consultation & mobile vehicle construction.

ROSS VIDEO LTD. ★
9 Plaza Dr., Box 220, Iroquois, Ont., K0E IK0 Canada
613 652-4889
Portable, studio & compact production switchers.

RPM-RADIO PROGRAMMING/ MANAGEMENT ★
25140 Lahser Rd., Ste. 232, Southfield, MI 48034
800 521-2537
Syndicated radio programming.

RTS SYSTEMS, INC. ★
1100 W. Chestnut St., Burbank, CA 91506
213 843-7022
Hardwired intercoms & IFB systems; mic mixers & portable consoles; phone preamps; telco interface equipment; audio preamps; line, monitor & power amps; audio DAs, amp power supplies.
SEE AD PG. 45

RUSLANG CORP. ★
320 Dewey St., Bridgeport, CT 06605
203 384-1266
Studio furniture, consoles & tape storage units; 19-inch equipment racks.

RUSSCO ELECTRONICS MFG., INC. ★
5690 E. Shields Ave., Fresno, CA 93727
209 291-5591
Audio DAs, preamps, power amps & audio consoles.

SACHTLER CORP. OF AMERICA ★
400 Oser Ave., Hauppauge, NY 11788
516 231-0033
Tripods, heads, ENG braces.
SEE AD PG. 46

SADELCO, INC. ★
75 W. Forest Ave., Englewood, NJ 07631
201 569-3323
Calibrators, bridges & signal level meters for CATV.

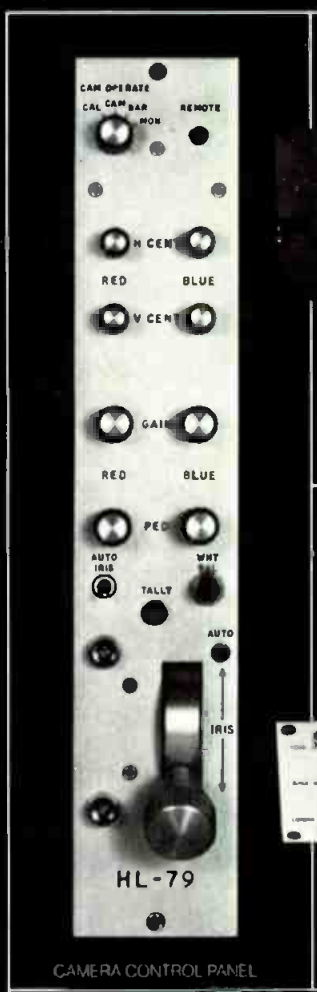
SAKI MAGNETICS ★
8650 Hayden Pl., Culver City, CA 90230
213 559-6704
Audio & video replacement heads.

HOWARD W. SAMS & CO., INC. ★
4300 W. 62 St., Indianapolis, IN 46268
317 298-5400
Broadcast products directories.

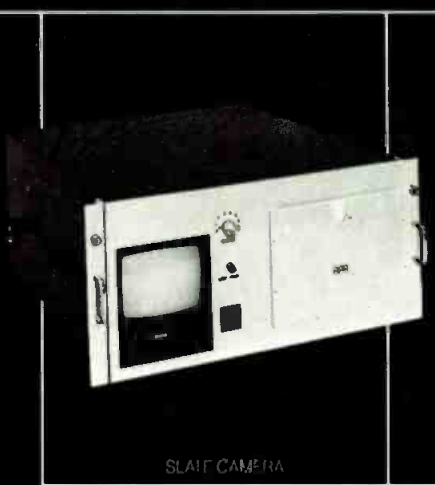
www.americanradiohistory.com

FIVE PROBLEM SOLVERS FROM AFA!

Here are five no-nonsense products that have been developed by A.F. Associates in direct response to requests from broadcast and cable engineers across the country:

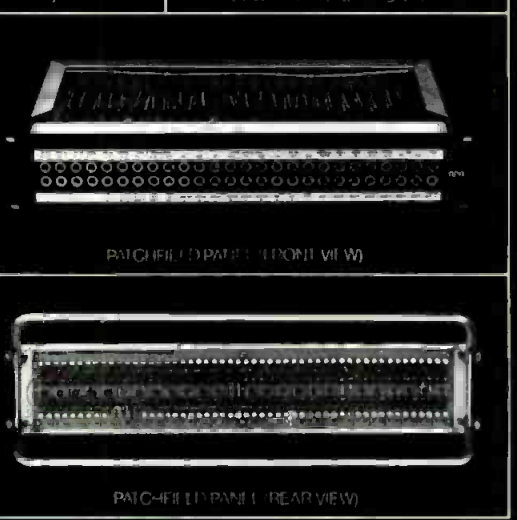


CAMERA CONTROL PANEL


SLATE CAMERA

RACK MOUNTED VTR (FRONT VIEW)

MONITORING UNIT


PATCHFIELD PANEL (REAR VIEW)

1. AFA JOY STICK CAMERA CONTROL PANEL (RCC-200 Series)
   Provides mobile and studio operations with a fast, simple method of controlling camera shadings.
2. AFA SLATE CAMERA SYSTEM (SC-300)
   A compact, self-contained title card camera for mobile and studio operations.
3. MARCONI VIDEOTAPE MONITORING UNIT
   Provides monitoring selection and TBC controls in a single unit.
4. AFA RICK RACK EXTENDER UNIT
   Provides a friction-controlled turntable that facilitates servicing of Ampex VPR2 & VPR2B and Marconi MR2 & MR2B VTRs when rack mounted.
5. AFA AUDIO PATCHFIELD
   Precision engineered audio patch panel.

For more information on specifications, costs and delivery, contact Richard Lunniss in New Jersey (201) 767-1000 or Noel Parente in California (213) 466-5066. Check them out, today!

AFA

A.F. Associates, Inc.

100 Stonehurst Court, Northvale, NJ 07647 1438 N. Gower St., Box 47, Hollywood, CA 90028

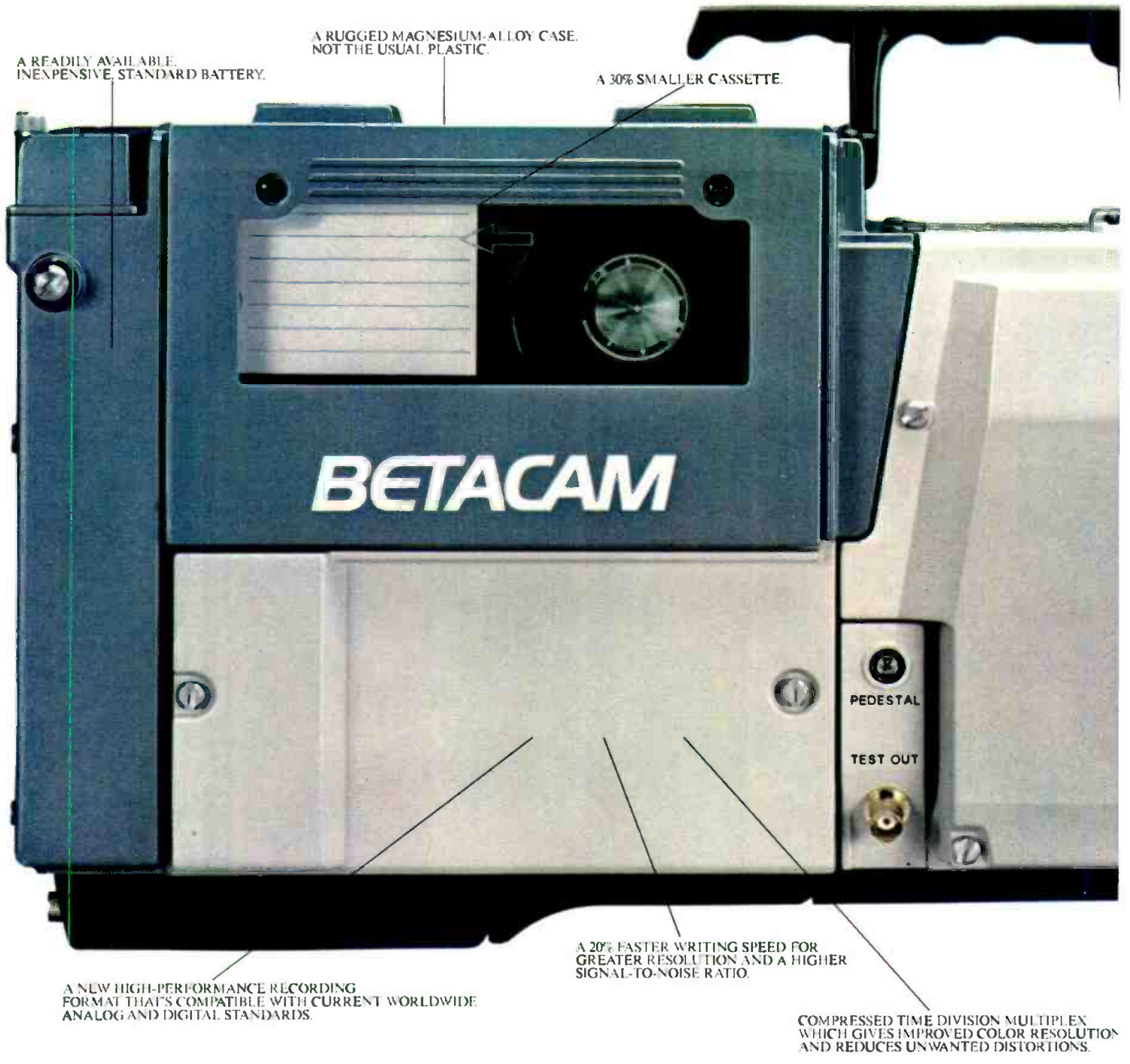
© 1982 A.F. Associates, Inc. All rights reserved

www.americanradiohistory.com

11 REASONS NEWS IS EASIER TO

Of course, there are other reasons why ENG and EFP applications are easier and better with a complete Betacam™ system. Like three tubes for full luminance depth of modulation, wide chroma recording bandwidth for superior color resolution and linear emphasis for superior color reproduction.

In fact, Sony also offers a rugged, cost-effective one-tube version of the Betacam.


A READILY AVAILABLE, INEXPENSIVE, STANDARD BATTERY.
A RUGGED MAGNESIUM-ALLOY CASE. NOT THE USUAL PLASTIC.
A 30% SMALLER CASSETTE.
BETACAM
PEDESTAL
TEST OUT
A NEW HIGH-PERFORMANCE RECORDING FORMAT THAT'S COMPATIBLE WITH CURRENT WORLDWIDE ANALOG AND DIGITAL STANDARDS.
A 20% FASTER WRITING SPEED FOR GREATER RESOLUTION AND A HIGHER SIGNAL-TO-NOISE RATIO.
COMPRESSED TIME DIVISION MULTIPLEX WHICH GIVES IMPROVED COLOR RESOLUTION AND REDUCES UNWANTED DISTORTIONS.

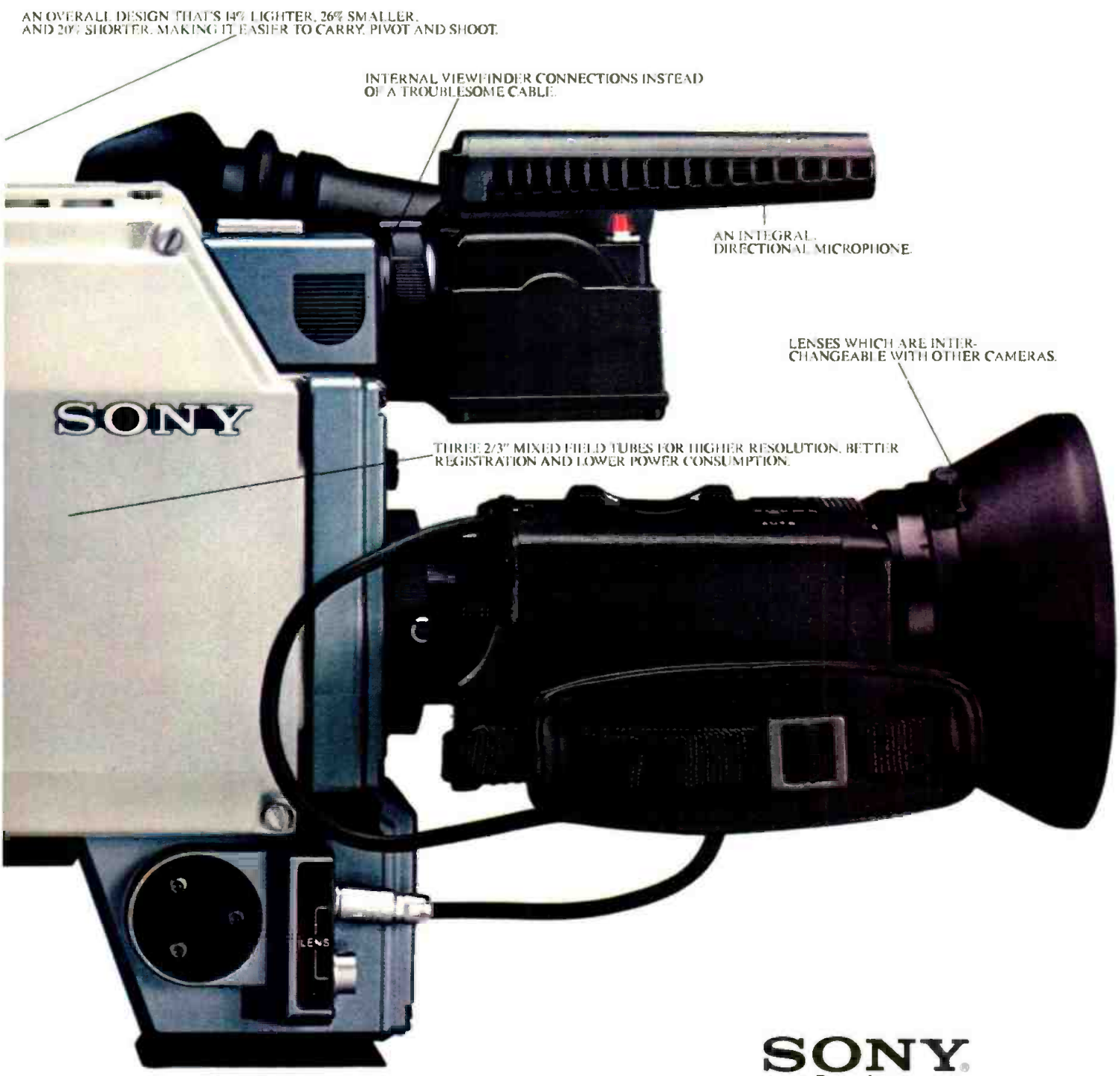
© 1982 Sony Corp. of America, 9 W. 57th St., New York, N.Y. 10019.

www.americanradiohistory.com

WHY THE TAKE WITH A SONY.

If you're looking for a half-inch cassette camera/recorder system that doesn't stop halfway, a system you can grow with that offers unmatched performance, flexibility and value—make it easy on yourself.

Call Sony in New York/New Jersey at (201) 368-5085; in Chicago at (312) 860-7800; in Los Angeles at (213) 537-4300; in Atlanta at (404) 451-7671; or in Dallas at (214) 659-3600.


AN OVERALL DESIGN THAT'S 14% LIGHTER, 26% SMALLER, AND 20% SHORTER, MAKING IT EASIER TO CARRY, PIVOT AND SHOOT.
INTERNAL VIEWFINDER CONNECTIONS INSTEAD OF A TROUBLESOME CABLE.
AN INTEGRAL, DIRECTIONAL MICROPHONE.
LENSES WHICH ARE INTER-CHANGEABLE WITH OTHER CAMERAS.
THREE 2/3" MIXED FIELD TUBES FOR HIGHER RESOLUTION, BETTER REGISTRATION AND LOWER POWER CONSUMPTION.
SONY
LENS

SONY
Broadcast

Sony is a reg. trademark and Betacam is a trademark of the Sony Corp.

www.americanradiohistory.com

SANSUI ELECTRONICS CORP. ★
1250 Valley Brook Ave., Lyndhurst, NJ 07071
201 460-9710
Audio cassette player/recorders; digital cassette recorders; graphic equalizers.

SATCOM TECHNOLOGIES ★
2912 Pacific Dr., Norcross, GA 30071
404 448-2116
Transmit/receive & receive only satellite earth stations, antennas.

SATELLITE BROADCAST NETWORK, INC./WEATHERMATION ★
190 N. State St., Ste. 516, Chicago, IL 60601
312 263-6921
Weather radar systems & weather information services.

SAWYER CAMERA & INSTRUMENT CO.
6820 Santa Monica Blvd., Los Angeles, CA 90038
213 466-6111
Videotape, tape loaders, edit controllers & equipment rental service.

SCALA ELECTRONIC CORP.
Box 4580, Medford, OR 97501
503 779-6500
Power dividers, remote pickup equipment; FM & communications antennas.

SCENE THREE, INC. ★
1813 Eighth Ave. S., Nashville, TN 37203
615 385-2820
Studio & mobile teleproduction facilities; post-production facility.

THE KEN SCHAFFER GROUP, INC. ★
330 W. 42 St., New York, NY 10036
212 695-1107
Digital special effects, delay, reverb, time compression/expansion; RF intercoms & mics; FM transmitters; receive only & transportable satellite earth stations; slow scan transmitters, receivers; spectrum analyzers; equipment rental service, earth station site selection.

SCHARFF COMMUNICATIONS, INC. ★
1600 Broadway, New York, NY 10019
212 582-7360
Mobile audio production facility.

SCHNEIDER CORP. OF AMERICA ★
400 Crossways Park Dr., Woodbury, NY 11797
516 496-8500
Camera lenses & accessories.
SEE AD PG. 87

SCIENTIFIC-ATLANTA, INC. ★
3845 Pleasantdale Rd., Atlanta, GA 30340
404 441-4000
Satellite transmit/receive, receive only earth stations & STLs; power dividers, modulators; FM, TV & satellite antennas; foam dielectric transmission cable; demodulators; program subcarriers, frequency monitors, controllers & RF test signal generators; status alarm indicators, equipment racks & RF cable.

SCIENTIFIC SYSTEMS, INC. ★
92 Westwood Dr., Toms River, NJ 08753
201 255-2230
Audio DAs.

SCOPE BROADCAST CONSULTANTS
2000 Broadway, Ste. 119, San Francisco, CA 94115
415 441-1070
Engineering consultation.

HH SCOTT, INC.
20 Commerce Way, Woburn, MA 01888
617 933-8800
Audio cassette player/recorders; audio analyzers.

SCOTT INSTRUMENT LABORATORIES ★
13 Sagamore Park Rd., Hudson, NH 03051
603 880-6300
Sound level meters & analyzers.

L.J. SCULLY MFG. CORP. ★
138 Hurd Ave., Bridgeport, CT 06604
203 368-2332
2,4-track studio ATRs.

SEA-CAM, INC. ★
6080 SW 28 St., Miami, FL 33155
305 665-5694
ENG/EFP video cameras; underwater video camera housings; equipment rental service.

SEACOR, INC. ★
123 Woodland Ave., Westwood, NJ 07675
201 666-5600
Capacitors.

SENCORE ★
3200 Sencore Dr., Sioux Falls, SD 57107
800 843-3338
Impedance bridges; audio & video test signal generators; oscilloscopes, multimeters & dB meters.

SENNHEISER ELEC. CORP. ★
10 W. 37 St., New York, NY 10018
212 239-0190
Headphones; dynamic, electret/condenser, RF, shotgun, lavalier & modular mics; mic stands, booms & dollies; impedance bridges.
SEE AD PG. 86

SESCOM, INC. ★
1111 Las Vegas Blvd. N., Las Vegas, NV 89101
702 384-0993
Mic mixers; ALC & AGC amps, parametric equalizers; preamps, line, monitor & power amps, amp power supplies; rotary & slide attenuators; audio patch panels; audio test signal generators & harmonic distortion meters; audio cable, connectors & jackfields; transformers.

SETCOM CORP.
1400 Stierlin Rd., Mountain View, CA 94043
415 965-8020
Headphones & hardwired intercoms.

SFENA CORP. ★
26 17 Aviation Pkwy., Grand Prairie, TX 75051
800 527-1777
Camera & helicopter stabilizing systems.

SHALLCO, INC. ★
Smithfield Industrial Park, Box 1089, Smithfield, NC 27577
919 934-3135
Rotary & slide attenuators.
SEE AD PG. 216

SHAREPOINT SYSTEMS, INC. ★
402 Tenth Ave., Haddon Heights, NJ 08035
609 546-1841
Cart machine controller/timers, digital clocks & timers.

SHARP ELECTRONICS CORP. ★
10 Sharp Plaza, Paramus, NJ 07652
201 265-5548
ENG/EFP, single tube & monochrome cameras; pro VHS VCR; NTSC color monitors. Audio cassette player/recorders & duplicators; disc playing equipment; speakers; preamps, line, monitor & power amps.
SEE AD PG. 58-59
Field Offices:
CA 20600 S. Alameda St., Carson 90810 ..... 213 637-9488
GA 6478 Dawson Blvd., Norcross 30093 ..... 404 448-5230
PA 60 Great Oak Drive, Churchville 18966 ..... 215 322-8842

SHINTRON CO., INC. ★
144 Rogers St., Cambridge, MA 02138
617 491-8700
Audio DAs; character generators; compact studio/mobile production switchers & encoded chromakeyers; SMPTE time code generators & readers; sync generators; pulse amps, video DAs & sc amps.

SHIVELY LABS, DIV. HOWELL LABS, INC. ★
85 Harrison Rd., Bridgton, ME 04009
207 647-3327
RF filters, loads, switches; power dividers & diplexers; FM, TV (HP & CP) antennas; antenna monitors, RF power meters & wattmeters; RF cable & jackfields.
SEE AD PG. 149
Refer to Reps/Distributors section

SHOOK ELECTRONIC ENTERPRISES, INC. ★
4846 Whirlwind, San Antonio, TX 78217
512 653-6761
Facility turnkey installations & mobile vehicle construction.

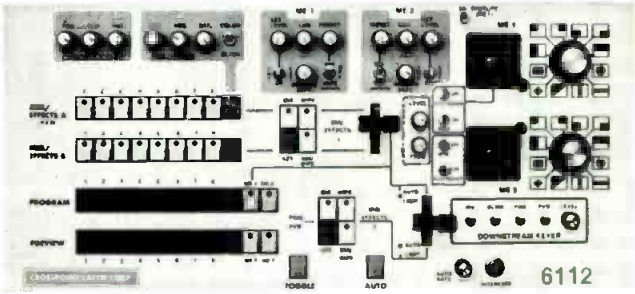
SHURE BROTHERS, INC. ★
222 Hartrey Ave., Evanston, IL 60204
312 866-2200
Mic mixers, portable consoles; pickup arms & phono cartridges; AM compressor/limiters, graphic equalizers; speakers, headphones; dynamic, electret/condenser, ribbon & lavalier mics, mic stands & booms; preamps, monitor & power amps; audio cable.
SEE AD PG. 27

SIECOR/OPTICAL CABLE
610 Siecor Pk., Hickory, NC 28603
704 324-3801
Fiberoptic transmission systems.

SIEGEL-ELECTRONICS ★
Box 33421, San Diego, CA 92103
714 295-4995
Post-production switchers; RGB, encoded chromakeyers, title & non-additive keyers; sync & black burst generators; NTSC encoders, comb filter decoders, dropout compensators; color correctors; proc amps.

www.americanradiohistory.com

VIDEO SWITCHERS



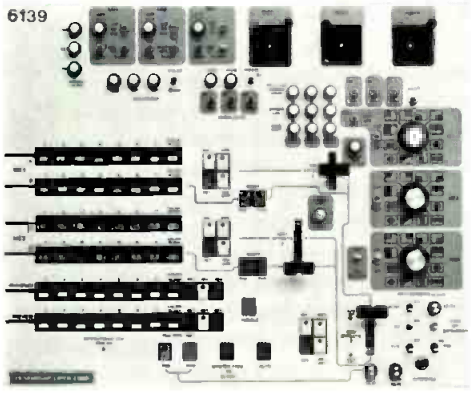
6112

The only switcher in its class to offer two fully independent MIX EFFECTS systems, with each M/E having its own pattern generator and positioner. This nine input, four bus unit includes the following standard features: downstream keyer, pattern modulator, spot-lite, colorizer, toggle or "take preview", automatic or manual mix and wipe operations, variable soft wipes, adjustable borders, internal or external keying on each M/E, intercom, loop-thru video inputs, preset of mix or wipes, black burst output, and a blanking processor. There is also a plug-in optional chroma keyer available. All inputs accept synchronous, non-synchronous, composite, non-composite, monochrome or color signals and go thru dual back porch clamping.

Price: $7,950.00 PAL $8,950.00

Options

Encoded chroma keyer (plug-in board)	**$1,050.00**
RGB chroma keyer (plug in board)	**$1,050.00**
Slimline control panel (4 inches)	**$250.00**

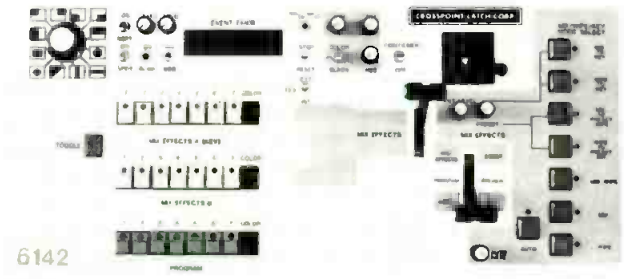


6139

Eight input production switcher with three fully independent Mix Effects Systems. Each ME has its own pattern generator and positioner. Downstream keyer with matte, blink, invert and edge or external border. Downstream keyer may be previewed. Five video signals can be displayed at the same time. Downstream fade to black. Quad split. Field expandable to 16 inputs with additional patterns.

Price: 14,500 PAL $15,500

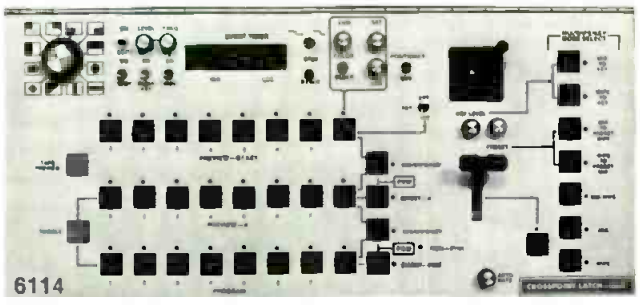
CHROMA KEYERS, each (max. two) (Encoded or RGB) encoded not available in PAL	**$1,050.**
Additional dual colorizer (instead of one CK)	**$420.**
Genlock board	**$350.**
Expansion Unit (8 additional inputs)	**$5,000.**
Additional patterns + rotary wipes	**$3,000.**



6142

The 6142 is a three bus, eight input completely self-contained switcher. This unit features dual fader handles which permits the operator to dissolve to an effect. The mix effects system features double re-entry along with 12 patterns, variable soft, 24 hour event timer, internal or external keying, pattern modulator, blink key, colorizer, toggle, spot lite, positioner, mix or wipe to key, preset of mix and wipes, blanking processor, loop thru video inputs, dual back porch clamps and black burst output.

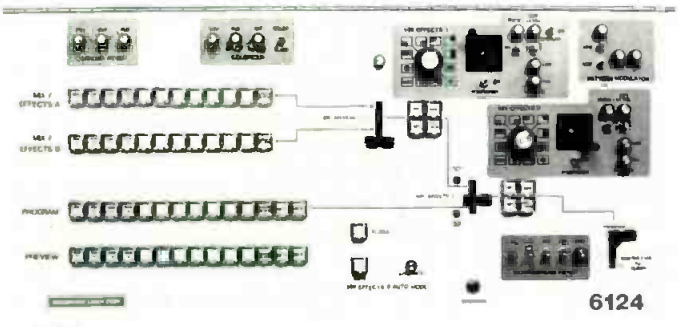
Price: $5,245.00 PAL $6,245.00



6114

The 6114 is a broadcast quality, eight input, three bus video switcher. It features 12 patterns, positioner, event timer, pattern modulator, soft wipe, spot lite, blink key, toggle, take preview, automatic or manual mix and wipe blanking processor, non-sync lamp, loop through video inputs and a blackburst output.

Price: $4,680 PAL $5,680



6124

Four bus, twelve input (including colorizer) video switcher with two fully independent mix effects systems, downstream keyer, RGB or encoded chromakeyer, pattern modulator, automatic or manual mix and wipe, colorizer, dual pattern generators with positioners, loop thru video inputs, take preview, toggle, adjustable soft and border effects, intercom, spot lite, dual back porch clamps, black burst output, blanking processor, master fade to black. Includes extender board and rack slides on electronic package. Control panel 30" x 14". Encoded chromakeyer not available in PAL.

Price: $13,700 PAL $14,700

CROSSPOINT LATCH CORP.

95 Progress Street • Union, N.J. 07083 • Tel. (201) 688-1510 • Telex: 181160

Circle 183 on Reader Service Card

www.americanradiohistory.com

SIEMENS CORP. ★
186 Wood Ave. S., Iselin, NJ 08830
201 321-3400
Gas-filled surge voltage protectors for cable amps & power supplies.

SIGMA ELECTRONICS, INC. ★
1830 State St., E. Petersburg, PA 17520
717 569-2681
Audio & video DAs; sync, black burst & color bar generators; sc, pulse & proc amps.
SEE AD PG. 20

SINGER BROADCAST PRODUCTS ★
19 Olney Ave., Cherry Hill, NJ 08003
609 424-1500
AM, FM & UHF transmitters; AM & FM exciters.

SINGER EDUCATION SYSTEMS ★
3750 Monroe Ave., Rochester, NY 14603
716 586-2020
16/35 mm telecine & slide projectors.

SITCO ANTENNAS ★
Box 20456, Portland, OR 97220
503 253-2000
UHF, VHF & LPTV antennas.

★ MEANS IT'S VERIFIED

SKAGGS TELECOMMUNICATIONS SERVICE (STS) ★
Video Production Service, 5181 Amelia Earhart Dr., Box 27477, Salt Lake City, UT 84127
801 539-1427
Studio & mobile teleproduction facilities; post-production facility.

SKIRPAN LIGHTING SYSTEMS, INC. ★
1100 W. Chestnut St., Burbank, CA 91506
213 843-3232
Automated lighting control systems.

SKOTEL CORP. ★
1445 Provencher Blvd., Brossard, Que., J4W 1Z3 Canada
514 465-8990
Digital metronomes; SMPTE time code generators & readers.

SMITH ELECTRONICS, INC. ★
8200 Snowville Rd., Cleveland, OH 44141
216 526-4386
Engineering consultation.

SMITH-VICTOR CORP. ★
301 N. Colfax, Griffith, IN 46319
219 924-6136
Audio & ½-inch video cassettes; tripods, heads; quartz lighting fixtures, lamps, stands, rigging & diffusion & effects material.

THE WARREN R. SMITH CO. ★
P.O. Drawer C, Ocean Gate, NJ 08740
201 269-6795
Snorkel lenses; animatics stands & title positioners.

SOLID ELECTRONICS LABS
49 Fairfield Rd., Havertown, PA 19083
215 446-4799
Equipment rental service.

SOLID STATE LOGIC ★
Dist. by Musicworks Intl.
2352 Wisconsin Ave., Washington, DC 20007
202 333-1500
Automated audio mixing consoles & machine control systems.
SEE AD COVER 3

SOLL, INC.
401 E. 74 St., New York, NY 10021
212 988-0290
Remote control systems; facility turnkey installations & engineering consultation.

SONAR RADIO CORP. ★
3000 Stirling Rd., Hollywood, FL 33021
305 981-8800
Audio & video tape bulk erasers; two-way radio communications systems.

SONO-MAG CORP. (SMC) ★
1833 W. Hovey Ave., Normal, IL 61761
309 452-5313
Computer automation controllers & complete automation systems; single, multiple, & time delay audio cart player/recorders.

SONY BROADCAST PRODUCTS CO. ★
One Sony Dr., Park Ridge, NJ 07656
201 930-1000
Studio, ENG/EFP, single tube & single piece cameras; standalone microprocessor CCUs. One-inch C VTRs, U-type & pro Beta VCRs; slow motion VTR controllers; editor/controllers, multisource editors, SMPTE time code generator & readers; TBCs; monochrome & NTSC video monitors & projectors. Full line of videotape and cassettes.
SEE AD PGS. 2-3,38-39,126-127,150-151
Field Offices:
CA 700 West Artesia Blvd., Compton 90220 . . . . . 213 537-4300
CA 676 River Oaks Pkwy., San Jose 95134 . . . . . 408 946-9090
IL 500 Park Blvd., Hamilton Lakes 60106 . . . . 312 773-6000
NJ 15 Essex Rd., Paramus 07652 . . . . . 201 368-5000
TX 1320 Walnut Hill Lane, Irving 75062 . . . . . 214 659-3621

SONY, PRO AUDIO DIV. ★
One Sony Dr., Park Ridge, NJ 07656
201 930-1000
Portable audio consoles; digital reverb systems; fixed-head, multichannel digital audio recorders; headphones; dynamic, electret/condenser, lavalier, shotgun & RF mics, mic stands, booms & dollies; RF intercom systems.

SOPER SOUND MUSIC LIBRARY ★
Box 498, Palo Alto, CA 94301
415 321-4022
Music library.

SOUNDCRAFT, INC. ★
20610 Manhattan Pl. #120, Torrance, CA 90501
213 328-2595
Portable, studio, stereo & automated consoles; multitrack ATRs.

SOUND DYNAMICS, INC.
Box 32055, San Jose, CA 95152
408 926-3588
Portable audio consoles; 2,4-track ATRs; rebuilt audio heads; telco interface equipment.

SOUNDSCRIBER MAGNETIC RECORDING CO., INC. ★
85 Willow St., New Haven, CT 06511
203 624-5179
Audio logging recorders.

SOUND TECHNOLOGY ★
1400 Dell Ave., Campbell, CA 95008
408 378-6540
Audio & RF generators; harmonic distortion & IM meters; autoranging tape recorder test systems & test records; RF stereo generators; multitest systems; spectrum analyzers, wow & flutter meters.

SOUTHWEST TELEPRODUCTIONS ★
2649 Tarna Dr., Dallas, TX 75229
214 243-5719
Studio & mobile teleproduction facilities; post-production facility.

SOUTHWESTERN PROGRAMMING SERVICE ★
86 W. University Dr., Ste. 10, Mesa, AZ 85201
602 833-2224
Business automation hardware.

SPECTRA COMPUTER SYSTEMS, INC. ★
391 Chipeta Way, Ste. C, Salt Lake City, UT 84108
801 581-5478
Digital art/paint systems, weather symbol inserters.

SPECTRA SONICS ★
3750 Airport Rd., Odgen, UT 84403
801 392-7531
Mic mixers; portable, stereo & mono & TV audio consoles; ALC & AGC amps, AM & FM compressor/limiters, graphic equalizers & analog special effects; speakers; preamps, line, monitor & power amps, audio DAs & amp power supplies. VU meters, audio test signal generators & noise measurement; audio cable.

SPECTRUM, INC. ★
1017 N. Minnesota Ave., Sioux Falls, SD 57104
605 339-3788
Radio business, scheduling, billing, traffic & ledger automation hardware.

SPENCER BROADCAST, INC. ★
2338 W. Royal Palm Rd., Ste. E, Phoenix, AZ 85021
602 242-2211
Engineering consultant; facility turnkey installations.
SEE AD PG. 146
Field Offices:
AZ Audio Path ENG Assoc., 316 E. El Camino Dr., Phoenix 85020 . . . . . 602 242-2211

SPHERE ELECTRONICS ★
20201 A Prairie St., Chatsworth, CA 91311
213 349-4747
Portable, stereo & mono, automated & TV audio consoles; preamps, line, monitor & power amps; audio patch panels.

www.americanradiohistory.com

MANUFACTURERS

SPINDLER & SAUPPE ★
13034 Saticoy St., N. Hollywood, CA 91605
213 764-1800
35 mm telecine slide projectors.

SPIN PHYSICS, INC. ★
(A KODAK CO.)
3099 Science Park Rd., San Diego, CA 92121
714 453-5410
VTR replacement heads; quad head refurbishing.

STAINLESS, INC. ★
Third St., N. Wales, PA 19454
215 699-4871
Antenna towers.
SEE AD PG. 93

STANCIL CORP.
921 N. Highland Ave., Hollywood, CA 90038
213 464-7461
Tape-based loggers.

STANDARD ELECTRIC TIME CORP. ★
357 Cottage St., Springfield, MA 01104
413 732-1141
Digital, master/slave clocks, timers & time distribution.

STANDARD TAPE LABORATORY, INC. ★
26120 Eden Landing Rd. #5, Hayward, CA 94545
415 786-3546
Audio test tapes.

STANTON MAGNETICS, INC. ★
200 Terminal Dr., Plainview, NY 11803
212 445-0063
Phono cartridges, phono preamps, record cleaning & care; headphones.
SEE AD PG. 192

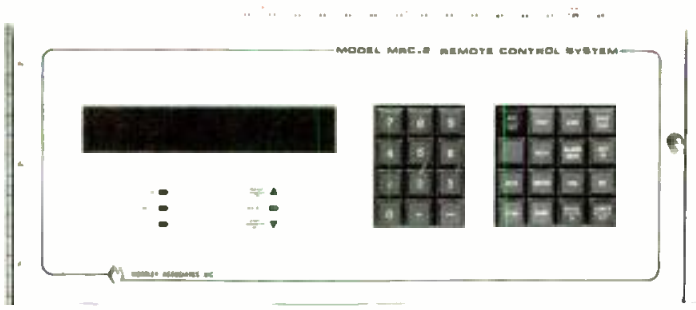
STANTRON, DIV. WYCO METAL PRODS. ★
6900-6918 Beck Ave., N. Hollywood, CA 91605
213 875-0800
Studio furniture, consoles & 19-inch equipment racks.

STAR CASE MFG. CO., INC. ★
15525 S. 70 Ct., Orland Park, IL 60462
312 429-6200
Foam insert & rack mounting transportation cases; production & post-production consoles.

STARFAX, INC. ★
8157 Lankershim Blvd., N. Hollywood, CA 91605
213 768-2905
Mobile teleproduction & video post-production facilities.

STATION BUSINESS SYSTEMS, DIV. CONTROL DATA CORP. ★
600 W. Putnam Ave., Greenwich, CT 06830
203 622-2400
Radio & TV business automation systems & TV newsroom computers.

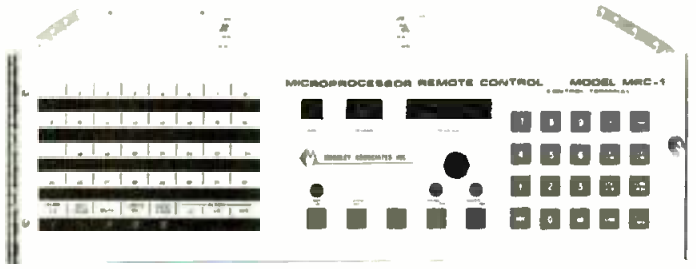
MICROPROCESSORS = MACRO RESULTS



MRC-2

- MULTI-REMOTE AND MULTI-COMMAND SITE CAPABILITY
- MULTIPLE TRANSMISSION CHANNELS
- USER DEFINED SOFTWARE
- CLEAR ENGLISH DISPLAY

Leading Moseley's ever-growing family of microprocessor-based remote and supervisory control systems, the MRC-2 offers the user the most flexible and complete method of controlling and monitoring up to 99 remote sites available. With dual data link capability, 32 control lines, 32 status, and 32 telemetry channels standard; expansion capabilities allow for up to six data links, up to 255 control lines, and 255 status and 255 telemetry channels. User-defined dual upper and dual lower telemetry limits alarm when exceeded. Status channels can be programmed to alarm on rising, falling, or rising and falling waveforms. The MRC-2 offers a choice of six calibration modes for telemetry inputs; all setup data is preserved in non-volatile memory. Multiple CRTs, Loggers, and Automatic Control Units for automatic transmitter operation are available at both command and remote terminals.



MRC-1

- MULTIPLE REMOTE SITE CAPABILITY
- AUTOMATIC TELEMETRY MUTING
- USER DEFINED SYSTEM SETUP
- UP TO 64 COMMAND LINES PER SITE

Closely following the MRC-2 in performance, Moseley's MRC 1 is the leading Microprocessor Control System in the industry today. Up to 64 command outputs at each of up to nine remote terminals gives the user outstanding system flexibility. System setup is tailored by the individual user. Telemetry channels may be keyboard-calibrated for linear, indirect power, or direct power scaling. The MRC 1 features modular design, upper and lower telemetry limits, automatic telemetry muting, and a set of 32 LEDs that display all status inputs from any site simultaneously. In case of extended shutdown, the Moseley Memory Option stores setup data for up to ten years. Optional CRT and Logging terminals simplify operator interface with the MRC-1. The Multiple Direct Command options offers ten preselected command functions to give the operator quick control of critical parameters at any site.

For further information please contact our Marketing Department.

MOSELEY ASSOCIATES, INC.
A Flow General Company . Santa Barbara Research Park
111 Castilian Drive . . . Goleta, California 93117
(805) 968-9621 . Telex: 658-448 . Cable: MOSELEY

Circle 184 on Reader Service Card

www.americanradiohistory.com

STEPHENS ELECTRONICS, INC. ★
3513 Pacific Ave., Burbank, CA 91505
213 842-5116
Open-reel, portable, studio & multitrack ATRs; splicing blocks, tape; SMPTE time code synchronizers.

STOREEL CORP. ★
2050-C Carroll Ave., Ste. #2, Box 80523, Atlanta, GA 30341
404 458-3280
Tape storage units.
SEE AD PG. 209

STRAIGHT WIRE AUDIO, INC. ★
2523 Wilson Blvd., Arlington, VA 22201
703 522-7780
Phase control mixing; phono preamps; noise reduction; preamps, line, monitor & power amps, audio DAs & amp power supplies.

STRAND CENTURY ★
20 Bushes Ln., Elmwood Park, NJ 07407
201 791-7000
Cyc lighting; HMI, CSI & quartz fixtures; stands & rigging; lighting control systems & dimmer packs.
SEE AD PG. 185
Field Offices:
CA 18111 S. Santa Fe St., Rancho Dominguez 90221
NJ 20 Bushes Ln., Elmwood Park 07407
Refer to Reps/Distributors section

★ MEANS IT'S VERIFIED

STUDER REVOX AMERICA, INC. ★
1425 Elm Hill Pike, Nashville, TN 37210
615 254-5651
Mic mixers; portable, mono & stereo & TV audio consoles; portable, studio & multitrack ATRs; SMPTE time code synchronizers; turntables; speakers; telco monitor & power amps.
SEE AD PG. 24
Field Offices:
CA 14046 Burbank Blvd., Van Nuys 91401 . . . . . 213 780-4234
IL Brian Tucker, 11 S. Driver, Tower Lake, Barrington 60010 . . . . . 312 526-1660
NJ Vision Sound, 110 Grand Ave., Englewood 07631 . . . . . 201 871-4101
NY 155 Ave. of the Americas, New York 10013 . . . . . 212 255-4462
TX 910 S. Glasgow Dr., Dallas 75223 . . . . . 214 760-8647
Refer to Reps/Distributors section.

STUDIO FILM & TAPE, INC. ★
6670 Santa Monica Blvd., Hollywood, CA 90038
213 466-8101
Videotape & film.

STUDIOMASTER, INC. ★
1365-C Dynamics St., Anaheim, CA 92806
714 528-4930
Mic mixers; portable, stereo & mono & TV audio consoles; cassette player/recorders; monitor & power amps.

JOHN M. SULLIVAN ASSOC., INC. ★
880 Commanwealth Ave., Boston, MA 02215
617 227-1710
Equipment, stage & studio rental service; audio & video post-production facility.

SUNDANCE PRODUCTIONS, INC. ★
7141 Envoy Ct., Dallas, TX 75247
214 688-0081
Studio & mobile teleproduction facilities; video post-production facility.

SUNRISE CANYON VIDEO ★
439 Western Ave., Glendale, CA 91201
213 241-5173
Studio & mobile teleproduction facilities; video post-production facility.

SUPEREX ELECTRONICS
151 Ludlow St., Yonkers, NY 10705
914 965-6906
Parametric equalizers; headphones; bulk erasers; video filters, signal & cable equalizers; image enhancers & video multiprocessors; video DAs.

THE SUPERIOR ELECTRIC CO. ★
383 Middle St., Bristol, CT 06010
203 582-9561
Lighting dimmer packs; automatic voltage regulators; cable connectors.

SUPERSCOPE, INC. ★
20525 Northoff, Chatsworth, CA 91311
213 998-9333
Electret/condenser mics; portable cassette recorders.

SURCOM ASSOCIATES, INC. ★
305 Wisconsin Ave., Oceanside, CA 92054
714 722-6162
Capacitors.
SEE AD PG. 215

SWAGER TOWER CORP. ★
Box 656, Fremont, IN 46737
219 495-5165
Tower masts, hardware & lighting.

SWINTEK ENTERPRISES, INC. ★
1180 Aster Ave. #J, Sunnyvale, CA 94086
408 249-5594
Intercoms; RF & lavalier mics; two-way radio transmitters/receivers.

SWITCHCRAFT, INC. ★
5555 N. Elston Ave., Chicago, IL 60630
312 792-2700
Audio cable, connectors & jackfields.

SWR, INC. ★
Box 215, Goffstown, NH 03045
603 497-3000
Rigid transmission line & accessories; RF cable & connectors; UHF & VHF antennas; RF switches.

SYLVANIA/GTE
See listing for GTE

SYMETRIX, INC. ★
109 Bell Street, Seattle, WA 98121
206 624-5012
AM & FM compressor/limiters, parametric equalizers; telco interface equipment; monitor & power amps; audio patch panels.

SYRACUSE SCENERY & STAGE LIGHTING, INC. ★
1423 N. Salina St., Syracuse, NY 13208
315 474-2474
Scenery rigging.

SYSTEM ASSOCIATES ★
5801 Uplander Way, Culver City, CA 90230
213 641-2042
Equipment listing catalog.

SYSTRON DONNER ★
2727 Systron Dr., Concord, CA 94518
415 682-6161
Digital clocks, time distribution systems; frequency monitors & counters; RF generators; multimeters, dB meters; multi-test systems; microwave equipment.

TABER MANUFACTURING & ENGINEERING CO. ★
2081 Edison Ave., San Leandro, CA 94577
415 635-3831
Audio replacement heads for VTRs & ATRs; audio & video bulk erasers; VTR replacement heads & refurbishing; general recorder service & parts; audio preamps, line amps & amp power supplies; new videotape; reels.

TANDBERG OF AMERICA, INC. ★
Labriola Ct., Armonk, NY 10504
914 273-9150
Open reel & cassette recorder/players; FM monitor tuners, audio monitors; preamps & power amps; receivers.

WILLIAM B. TANNER CO. ★
2714 Union Ext., Memphis, TN 38112
901 320-4212
Music library; radio & TV audio production.

TAPEPOWER ★
304 E. 45 St., New York, NY 10017
212 370-9191
Studio & mobile teleproduction facilities; video post-production facility.

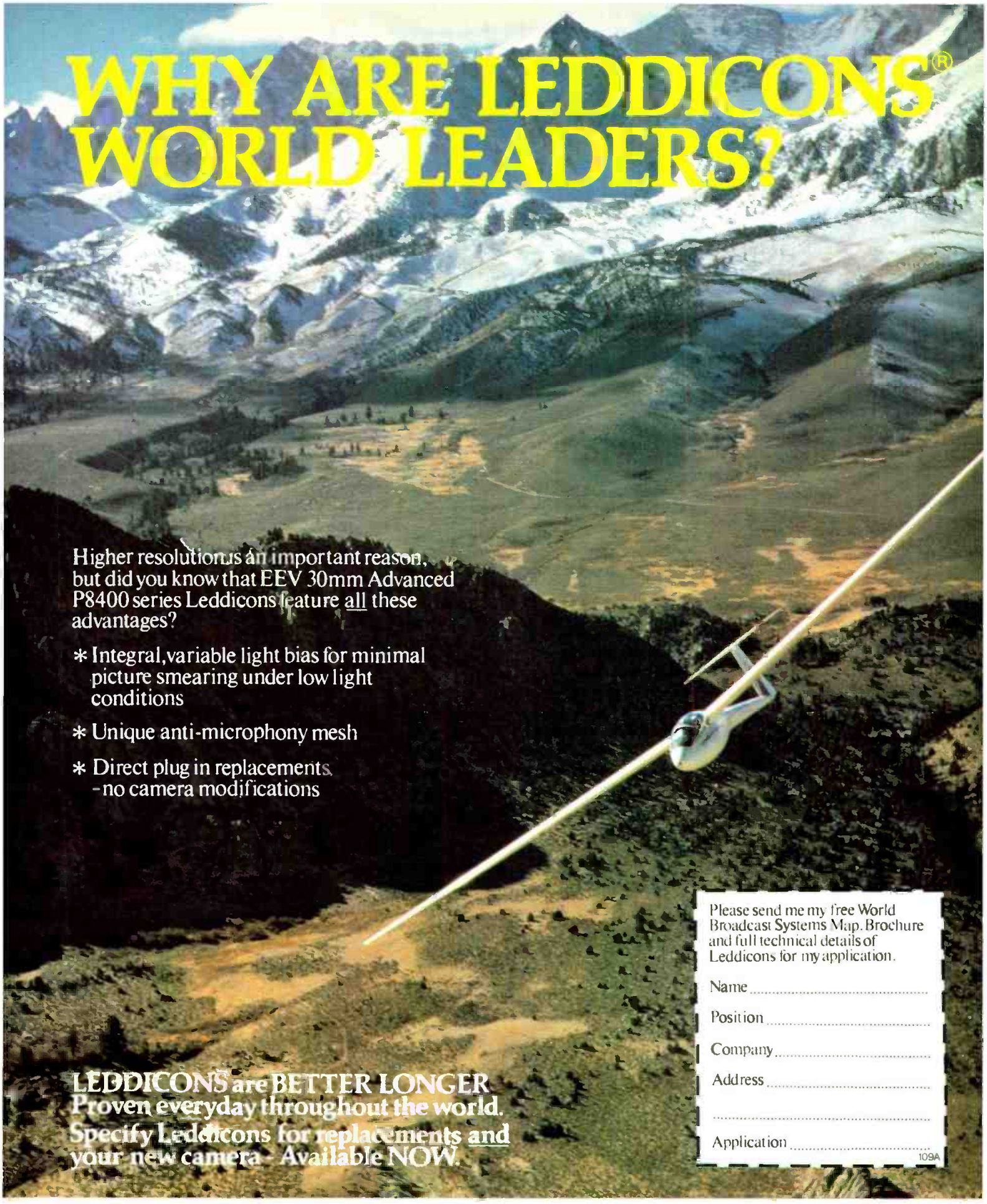
TAPEX CORP. ★
228 Fifth St., Ste. 2, Box 65668, W. Des Moines, IA 50265
515 274-3087
Audio carts, cassettes & test tapes.

TBS FIELD OPERATIONS, DIV. TURNER BDCST. ★
1050 Techwood Dr., Atlanta, GA 30318
404 898-8736
Mobile video production facilities.

TDK ELECTRONICS CORP. ★
12 Harbor Park Dr., Port Washington, NY 11050
516 625-0100
Audio & video cassettes, open reel & test tape; tape cleaners/evaluators.

TEAC CORP. OF AMERICA
7733 Telegraph Rd., Montebello, CA 90640
213 726-0303
Stereo studio consoles; open-reel ATRs; cassette decks, head degaussers; audio preamps, amp power supplies; graphic equalizers & filters; dynamic & electret/condenser mics.

www.americanradiohistory.com


WHY ARE LEDDICONS® WORLD LEADERS?
Higher resolution is an important reason, but did you know that EEV 30mm Advanced P8400 series Leddicons feature all these advantages?
* Integral, variable light bias for minimal picture smearing under low light conditions
* Unique anti-microphony mesh
* Direct plug in replacements - no camera modifications
LEDDICONS are BETTER LONGER
Proven everyday throughout the world.
Specify Leddicons for replacements and your new camera - Available NOW.
Please send me my free World Broadcast Systems Map. Brochure and full technical details of Leddicons for my application.
Name .....
Position .....
Company .....
Address .....
.....
Application .....
109A

EEV, INC.
7 Westchester Plaza, Elmsford, NY10523, Tel: 914-592-6050, Telex: 646180
In Canada: EEV Canada Ltd., 67 Westmore Drive, Rexdale, Ontario M9V 3Y6, 416-745-9494, Telex 06-989363
In Europe: English Electric Valve Co. Ltd., Chelmsford, Essex CM1 2QU, England, Tel. 0245 61777, Telex 851-99103

® Registered Trademark for Leddicon Camera Tubes

Circle 185 on Reader Service Card

www.americanradiohistory.com

PERFECT TIMING

780 SERIES

RAM TIME PROGRAMMERS $1200 to $1500

When programming more than eight events, **the 780 Series RAM Time Programmers are** the most cost-effective way of dealing with the problem. They are flexible, easy to use, and provide 32 events (expandable to 96) in 5¼ inches of rack space.

780 Series units operate from the power line, with a backup crystal time base and 72 hour battery/charger as an integral part of the equipment.

The front panel consists of:

- An eight digit real time display when day selection is required as on the ES 781, 784, 785, seven digits for ES 780, and six digits for the others.
- A two digit display of "Next Event" number.
- An eight digit display of "Next Event Time" when ES 780, 781, or 782 is specified, and a six digit display when ES 783, 784, 785, 786 or 787 is specified, and a four digit display when ES 788 or 789 is specified.
- All displays are .3 inch red light emitting diodes.
- Controls, mounted below the displays, consisting of:

An "Active-Disable" Switch used when it is necessary to preempt the program temporarily.

Time Setting Controls—All recessed to avoid accidental bumping.

"Display"—The displays can be observed by actuating this control during a power outage. The unit will continue to operate, but the displays will be blanked to conserve battery energy.

"Event Select"—A two decade thumbwheel, used to set the event number when entering or reading data in the memory.

"Event Time Select"—An eight or six or four decade thumbwheel, used to enter the event time in the memory. The number of thumbwheels will be determined by the part number of the unit specified.

"Enter"—This pushbutton is actuated to enter data into the memory.

"Run-Reed/Enter"—A two position switch, placed in the "Run" position for normal operation, and in the "Read/Enter" position whenever entering data or reading data.

STANDARD UNITS

EIGHT DIGITS OF PROGRAMMING CAPACITY

ES 780—10 Days, 10 Outputs, Hours, Minutes, Seconds

ES 781—100 Days, Hours, Minutes, Seconds

ES 782—16 Outputs, Hours, Minutes, Seconds

SIX DIGITS OF PROGRAMMING CAPABILITY:

ES 783—Hours, Minutes, Seconds

ES 784—100 Days, Hours, Minutes

ES 785—100 Days, Minutes, Seconds

ES 786—16 Outputs, Hours, Minutes

ES 787—16 Outputs, Minutes, Seconds

FOUR DIGITS OF PROGRAMMING CAPABILITY

ES 788—Hours, Minutes

ES 789—Minutes, Seconds

The size of the unit is 5¼" High x 19" Wide x 10" Deep—Relay Rack construction, totally enclosed, with a screen top.

ES 782, 786 and 787 have 16 isolated outputs. Any of the 32 events can be programmed to activate any of the 16 outputs. **ES 780** has 10 outputs. The other units have a single output.

ES 784, 786 and 788 have a one minute contact closure. The others have a one second contact closure. Contacts are single pole, form A, reed type, and have a one amp rating.

THE 780 SERIES AS A MASTER CLOCK

By adding the **ES 167** Serial Time Code Generator and using a more accurate crystal, the 780 Series Ram Time Programmers can serve the dual functions of Master Clock and 96 event programmable timer.

750 SERIES

THUMBWHEEL PROGRAMMER/ COMPARATORS $310 to $390

When programming up to eight time events, the 750 Series is recommended. Thumbwheel switches are set to compare the time information from an ESE Clock or Timer.

An output (event) occurs each time the thumbwheel switch setting agrees with the time display.

One set of thumbwheels is required for each event. The standard 750 Series units are enclosed in a 3½ inch high relay rack panel and chassis.

STANDARD UNITS

ES 750—ES 112 and one 8 Digit Program

ES 751—ES 124 and one 6 Digit Program

ES 753—ES 112 and two 4 Digit Programs (Hrs & Min)

ES 754—ES 124 and two 4 Digit Programs (Hrs & Min)

ES 756—ES 510 and one 4 Digit Program (Min & Sec)

ES 758—ES 510 and two 4 Digit Programs (Min & Sec)

ES 760 $620

ATS CLOCK

The **ES 760** is a six digit, 24 hour, programmable clock.

On the front panel are a six digit display of time, in hours, minutes and seconds, and two sets of four thumbwheels.

An internal comparator is fed "Clock Time" and "Thumbwheel Time," and when these two agree, a reed relay contact closure occurs, which is brought to a rear-mounted connector. The connector also provides four line parallel BCD time information.

If normal power is interrupted, ES 760 will automatically switch to its internal battery and crystal time base.

Mechanical: 3¼" High x 19" Wide x 8" Deep.

PRESETTABLE TAPE TIMERS

ES 1296 $195

For Off-Air taping, or operating tape recorders when nobody is there, ESE has created ES 1296.

ES 1296 is a six digit, twelve hour clock with LED displays and a programmable, 300 watt, 117V AC outlet on the rear.

There are four push-button controls (Fast, Slow, Set and Reset) and a four position selector switch. The Fast and Slow controls are used to set time of day and recorder start time.

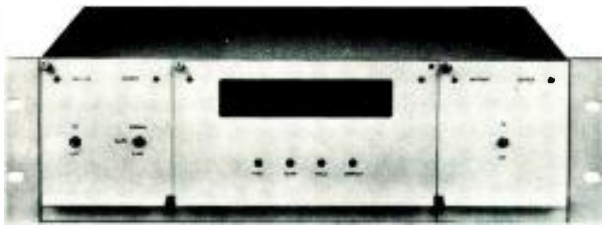
When setting the recorder start time, the Set control is used in addition to the Fast and Slow controls, to set the time to the nearest minute. A rear-mounted four position switch is used to pre-set the start time as far ahead as 96 hours.

Once the rear outlet is activated, it will remain on for 66 minutes.

The **Record Duration** option allows the user to select one of four time intervals for recording. These four time intervals are either 16, 33, 66 and 138 minutes, or 33, 66, 138 and 250 minutes.

An additional option is **Sequential Turn-on**, for those machines that require Power, Play, Record in sequence.

A Manual Override Switch can be provided as an option, so that the user may operate his machine at any time without disconnecting from the ES 1296.



ESE Masters provide a means of keeping all time displays in the system in agreement, through the use of a Serial Time Code. Only one pair of wires is needed to distribute the time code to all remote serial input displays.

An ESE Master Clock System can operate digital displays, clocks with sweep second hands, printers and, in addition, tell your computer what time it is.

Twelve hours of standby battery operation is standard in ES 160, 160/1 and 190.

MASTER CLOCKS

ES 160 Mounted in a 5¼" relay rack panel and chassis, displays six digits of time information on .3" LED displays, in 12 hour format.

ES 160 has three second per month accuracy. Its standard output is serial BCD, CMOS compatible, and can drive ES 161, 166, 171, 991 or 993 Remote Displays without buffering. All inputs and outputs are through rear-mounted connectors.

Dimensions: 5¼" High x 19" Wide x 15" Deep **$1050**

ES 160/1 One second per month version of ES 160. **$1225**

ES 190 The ultimate in accuracy! Similar to ES 160, with special circuits for receiving and decoding a 1000 Hz tone at the start of each minute. The decoder output resets the seconds' counters in the clock each minute except the first minute of every hour. These tones are transmitted by radio Station WWV, with an oscillator accuracy of ±1 part in 10⁹. ES 190 has an antenna and internal WWV receiver with audio-output. Displays are .3" red LED's. Serial output drives ES 161, 166, 171, 991 and 993 Remote Displays.

Dimensions: 5¼" High x 19" Wide x 15" Deep. **$1225**

ES 192/194 The most economical Masters. ES 192 (12 Hr) and ES 194 (24 Hr) are constructed using ES 112 or ES 124 digital clocks and adding the ES 167 Serial Time Code Generator to provide the output needed to drive Remote Serial Displays ES 161, 166, 171, 991 and 993. Displays are .6" incandescent type.

Dimensions: 2¼" High x 8" Wide x 6" Deep. **$325**

ES 196 TIME AND TEMPERATURE MASTER Basically the same as ES 192, but with gas discharge displays, panel mounting and separate serial BCD outputs for time and temperature. Displays 12 hour and °F format.

Dimensions: 3½" High x 19" Wide x 8" Deep. **$766**

ACCESSORIES

ES 161 REMOTE DIGITAL DISPLAY Decodes serial time data and displays six digits of time on .55" Gas Discharge Displays, in either 12 or 24 hour format.

Dimensions: 8" Wide x 2½" High x 6" Deep. **$165**

ES 162 IMPULSE DRIVER Plugs into the ES 160 chassis, can drive 20 Impulse Clocks. Designed so that, if power fails, impulse always comes on with the same polarity when power is restored. **$200**

ES 164 REMOTE DIGITAL IMPULSE DISPLAY Similar to the ES 161 except that the ES 164 derives its count command from the ES 162 Impulse Driver, or any impulse clock drive circuits already installed.

Dimensions: 8" Wide x 2½" High x 6" Deep. **$244**

ES 166 JUMBO 1" CLOCK DISPLAY Features six digits of one inch gas discharge displays in 12 or 24 hour format. Receives serial time code input from any ESE Master Clock or ES 167.

Dimensions: 10½" Wide x 4½" High x 6½" Deep. **$254**

ES 167 SERIAL TIME CODE GENERATOR An integral part of ES 160, 190, 192/194 and 196 Master Clocks, this unit can be added to many other ESE products, including ES 112, 124, 182, 184, 992, 994, 750, 751, 753, 754 and all 780 Series Time Programmers. Drives ES 161, 166, 171, 991 or 993 Remote Displays. **$146**

ES 168 TEMPERATURE SLAVE Receives serial code from ES 196, displays it on .55" Gas Discharge Displays.

Dimensions: 8" Wide x 2½" High x 6" Deep. **$146**

ES 171 CONSOLE MOUNT REMOTE DISPLAY Receives the serial time code generated by any ESE Master Clock, or any ESE product containing the ES 167 serial time code generator, and displays it on bright red .3" LED's.

Dimensions: 2½" High x 4½" Wide x 4" Deep. **$158**

ES 1548 CONSOLE MOUNT TEMPERATURE DISPLAY In the same case as ES 171, receives the serial code from ES 196 and displays it on bright red .3" LED's.

Dimensions: 2¼" High x 4½" Wide x 4" Deep. **$158**

IMPULSE CLOCK When a sweep second hand is desired, specify the 3201.003 "Extra Flat" Impulse Clock. It has a 12 inch dial protected by a glass cover and metal bezel and is approximately one inch thick. As many as twenty impulse clocks can be driven by a Master Clock which has ES 162 as an accessory. **$195**

ES 991 4 DIGIT SERIAL INPUT SLAVE Decodes serial time data and displays four digits of time on large 2" gas discharge displays.

Dimensions: 10½" Wide x 4½" High x 6½" Deep, Desk Top Case. **$325**

ES 993 6 DIGIT SERIAL INPUT SLAVE Features four digits of 2" high gas discharge displays, and two digits (Seconds) of 1" gas discharge displays. Receives serial time code input from any ESE Master Clock or ES 167.

Dimensions: 5" High x 12" Wide x 3" Deep (Wall Mount) **$449**

SMPTE TIME CODE GENERATOR: ES 261 is a pre-settable, eight-digit SMPTE/Time Code Generator, capable of Drop Frame or Non-Drop Frame operation. **$750**

ES 253 SMPTE TIME CODE READER: is an eight-digit SMPTE Time Code Reader displaying Hours, Minutes, Seconds and Frames. **$454**

ES 254 SMPTE TIME CODE READER: is a bi-directional, multi-speed eight-digit reader, displaying Hours, Minutes, Seconds and Frames on .4" red LED displays. **$675**

ES 255 is a bi-directional, multi-speed, eight-digit SMPTE Code Reader, that can add the information to a video stream for recording time code on the video portion of a tape, or for displaying it on a monitor. Reading speed is 1/20 to 20 times playback speed. **$995**

www.americanradiohistory.com

ES 112/124

DIGITAL CLOCK $165

ES 112 (12 hr.) and **ES 124** (24 hr.) are solid state, six digit clocks. Can drive 80 Series and 90 Series slaves. Displays are incandescent filament, .6" high.

Dimensions: 2"± High x 8" Wide x 6" Deep

ES 142/144

DIGITAL CLOCK THERMOMETER $300

ES 142 (12 hr.) and **ES 144** (24 hr.) are solid state digital clock/thermometers. Six digits of time (hours, minutes, seconds) and 3 digits of temperature (−50°F to +150°F or −45°C to +66°C) in gas discharge displays .55" high. Temperature sensor on 25 ft. cable included.

Dimensions: 2½" High x 10" Wide x 6" Deep

ES 240/241

ES 240 DIGITAL THERMOMETER is calibrated for °F and °C. Displays are planar gas discharge, .55" high. $195

Dimensions: 2½" High x 8" Wide x 6"-Deep.

ES 241 DIGITAL THERMOMETER is calibrated for °F and °C, alternating between the two every four seconds. Displays are planar gas discharge, .55" high. $236

$113 $135

ES 211/214

DYNAMIC AUDIO LEVEL INDICATOR

The **ES 214** is a highly accurate audio level indicator which is designed to simulate the action of a conventional VU-Meter but with superior dynamic characteristics. The LED meter is five to one hundred times faster in responding to complex waveforms than the mechanical meter without sacrificing the familiar meter "movement."

SPECIFICATIONS

Number of Indicators: 14 LED Lamps in 3 colors.

Scale: +4, +3, +2, +1 dB—Red
0 dB—Yellow
−1, −2, −3, −5, −7, −10,
−15, −20, −25 dB—Green

Input Impedance: 2200 ohms at maximum sensitivity. 6800 ohms at +8dBm "House Level". 10,000 ohms at minimum sensitivity.

Input Circuit: Transformer isolated, balanced bridging.

Frequency Response: 20-20 KHz ± 1 dB (all modes)

Rise Times: Less than 250 MicroSec (Peak Mode), less than 25 MilliSec (Fast Averaging Mode). Approximately 300 MilliSec (Optional VU Standard)

Fall Time: (All Modes) About 300 MicroSec from full scale

Modes of Operation: Peak Reading, Fast Averaging (Apparent Loudness), Slow Averaging (USA VU-Standard)

70 SERIES

CONSOLE MOUNT CLOCKS AND TIMERS

ES 172 SIX DIGIT, 12 HOUR CLOCK: Three setting controls—Fast Advance, Slow Advance and Hold. $158

ES 174 SIX DIGIT, 24 HOUR CLOCK: Otherwise identical to the ES 172. $158

ES 370 FOUR DIGIT, ONE HUNDRED MINUTE UP/DOWN TIMER: Six controls—Count Up, Count Down, Stop, Minutes Advance, Seconds Advance, Reset. $201

ES 371 UP/DOWN TIMER: Similar to the ES 370 except with Leverwheel Preset capability for faster setting of the desired time. $319

ES 570 FOUR DIGIT, SIXTY OR 100 MINUTE TIMER: Select 60 or 100 minute mode on rear connector. Start, Stop and Reset controls. Runs continuously unless stopped. Reset will return all displays to zero. Unit will run if reset while running or will stay at zero if reset when stopped. $158

ES 572 SIX DIGIT, 12 HOUR CLOCK OR TIMER: Five controls—Start, Stop, Reset, Fast Advance, Slow Advance. Will run continuously to 12:59:59. Advances to 1:00.00 and continues as clock unless stopped or advanced. $192

ES 574: A 24 hour version of ES 572. $192

ES 575: Exactly like ES 570, with the addition of a "freeze" button. When the button is released, the display "catches up" with the correct elapsed time. $192

Dimensions: 2 16" High x 4.5" Wide x 4.13" Deep

80 SERIES

JUMBO CLOCKS AND TIMERS

Large, bright 1" gas discharge displays provide effortless long distance viewing from 40 feet.

ES 182 SIX DIGIT, 12 HOUR CLOCK: Three rear-mounted setting controls—Fast Advance, Slow Advance, and Hold. $272

ES 184 SIX DIGIT, 24 HOUR CLOCK: Otherwise identical to the ES 182. $272

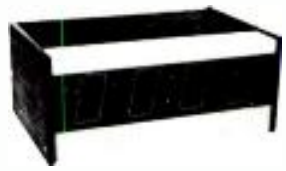
ES 380 FOUR DIGIT, 100 MINUTE UP/DOWN TIMER: Displays minutes and seconds, with rear-mounted connector to allow remote wiring of six momentary SPST CONTROLS—Count Up, Count Down, Stop, Minutes Advance, Seconds Advance and Reset. Other features similar to ES 301. $316

ES 381 UP/DOWN TIMER: Similar to ES 380, except that leverwheel preset is used. $416

ES 580 FOUR DIGIT, 60 MINUTE TIMER: Displays minutes and seconds. Rear connector allows remote wiring of three momentary SPST controls— Start, Stop and Reset. Reset returns all displays to zero, and timer will continue to run from zero if reset while running.

80 Series slaves are also compatible with other ESE clocks and timers: ES 112/124, 301, 302 and 510. $228

Dimensions: 4 45" High x 10.38" Wide x 6.58" Deep



90 SERIES

2 INCH DISPLAYS— VIEWABLE AT 60 FEET

ES 381—Presettable Up/Down Timer: 100 Minute Range—Displays Minutes and Seconds, uses Leverwheel Preset. Controls are Count Up, Count Down, Stop, Reset and Preset. $487

Dimensions: 4 45" High x 10 38" Wide x 6 58" Deep.

ES 590—Sixty Minute Timer: Displays Minutes and Seconds. Rear-mounted connector provides for wiring to user's single pole, momentary, push-button controls. Start, Stop and Reset. Reset returns all displays to zero, and timer will continue to run from zero if reset while counting. $228

Dimensions: 4 45" High x 10 38" Wide x 6.58" Deep

ES 992/994—6 Digit Clocks: ES 992 (12 Hr) and ES 994 (24 Hr)—Hours and Minutes on Two Inch Gas Discharge Displays. Seconds on One Inch Gas Discharge Displays. Three top-mounted setting controls—Fast Advance, Slow Advance and Hold. $449

Dimensions: 5" High x 12" Wide x 3⅛" Deep

ES 562/564

SIX DIGIT CLOCK/ TIMER WITH MEMORY $313

ES 562/564 is a combination six digit clock and 24 hour timer with memory, allowing the user to set the clock to the correct time of day, switch to timer mode, then switch back to time of day by pushing one button: time of day will be correctly displayed. In hours, minutes and seconds. Five pushbutton controls are mounted on the top of the unit, near the front of the desk-top case. When panel mounting is specified, they will be mounted on the front panel, below the display. The controls may also be remoted, through two rear-mounted five pin connectors (Option R or Option D). These controls are Clock, Fast/Start, Slow/Stop, Timer and Hold.

Display: Six digits of .55" Planar Gas Discharge Display

ES 280

AUDIO TIME CODE GENERATOR/READER

The ES 280 is a 10 Digit Audio Time Code Generator/Reader, capable of laying down a serial BCD time code on audio tape in the Generator Mode, and recovering and displaying it in Digital form in the Reader Mode. The code has been designed by ESE. It is not a standard code, such as SMPTE or IRIG. The frequencies used to produce the code have been selected to be compatible with cartridge machines as well as other tape recording and playback equipment. Amplitude adjustment assures the right amount of signal for the particular machine being used.

ES 510L

FOUR DIGIT 60 MINUTE TIMER $158

ES 510 is a four digit, sixty minute timer (59:59) with Start, Stop and Reset controls. If stopped, display will hold time reading and when restarted will continue with next count from last displayed figure. If reset while running, timer will continue to run. ES 510 can drive 80 Series and 90 Series Slaves.

Dimensions: 2½" High x 6" Wide x 6" Deep

ES 203/205 $89

ES 203/205 is a 20 input Timer/Source Interface. It was designed to provide a simple means of connecting a variety of sources such as carts and turntables to the remote input of ESE Timers. The most common application for this product is resetting either an ES 400 or ES 510 Timer each time a source is started.

The 20 inputs are divided into ten DC voltage inputs and ten contact closure inputs. Activation of any one of these inputs will cause an output which will momentarily reset an ESE timer.

Mechanical: Aluminum Case 8" x 6" x 2".

ES 301/302

100 MINUTE UP/DOWN TIMERS $234 $302

ES 301 is a four digit, one hundred minute timer (99:59) with six controls: Count Up, Count Down, Stop, Minutes Advance, Seconds Advance, Reset. Counting can be activated up or down or set back to zero. When "Stop" control is pressed, the four digit display is held. Counting direction (up or down) can be changed or time can be reset to zero without stopping the count. The ES 301 can drive 80 Series and 90 Series Slaves. Displays are gas discharge, .55" high.

With the **ES 302**, the user can preset times much faster than with the ES 301, because lever-wheel type switches are used for the preset feature. The ES 302 can drive 80 Series and 90 Series Slaves.

Dimensions: ES 301. 2½" High x 8" Wide x 6" Deep
ES 302. 2½" High x 10" Wide x 6" Deep

ES 206

VIDEO TIME AND DATE GENERATOR $475

The **ES 206** has been designed to allow the addition of Time and Date information to a video signal. Two rear-mounted video jacks permit "looping" the video information through the 206 to add the data.

ES 270 IRIG B TIME CODE READER $350

The **ES 270** TIME CODE READER has been designed to be an economical solution to the problem of receiving and displaying IRIG B.

Nine digits (Days, Hrs, Min, Sec) of time are shown on bright red LED's, .3" character height.

ES 270 comes in a rack mounting enclosure, 1¾" High, 19" Wide and 10" Deep.

The power requirement is 117V AC, 50/60 Hz, 230V AC, 50 Hz is available as an option.

ESE

142 Sierra Street El Segundo, CA 90245
(213) 322-2136

Circle 186 on Reader Service Card

www.americanradiohistory.com

Save Money

DIGITAL AUDIO DELAY

BLEEPMATE™ 675

- Simply the best for less
- Designed to end the hassles of delay
- Priced below comparable tape and solid state units

- Immediate delivery
- Tired of being ripped off?

Talk to your friends who compared and bought the Bleepmate

Contact us today:
Comex Systems
2 Columbia Drive
Amherst, NH 03031
(603) 889-8564

Distributor inquiries are welcome of course.

Join the Price/Performance Leaders

COMEX SYSTEMS

Circle 187 on Reader Service Card

MANUFACTURERS

TEATRONICS, INC. ★
101-D Suburban Rd., San Luis Obispo, CA 93401
805 544-3555
Lighting control boards, dimmer packs.

TECH ELECTRONICS, INC. ★
6000 Peachtree Rd. NE, Atlanta, GA 30341
404 455-7626
Programmable videotape controller; custom remote control for a/v systems.

TECH LABORATORIES, INC. ★
Bergen & Edsall Blvds., Palisades Pk., NJ 07650
201 944-2221
Rotary & slide attenuators.

TECHNICS ★
One Panasonic Way, Secaucus, NJ 07094
201 348-7783
Turntables; direct drive tape decks & cassette players.

TECHNISPHERE CORP. ★
215 E. 27 St., New York, NY 10016
212 889-9170
Equipment rental service; post-production facility; electronics design & repair services; facility installation & design.

TECHNOLOGY SERVICE CORP. ★
2950 31 St., Santa Monica, CA 90405
213 450-9755
Weather radar systems.

TECHTRAN INTERNATIONAL, INC. ★
Box 2245, Appleton, WI 54913
414 731-8679
Portable ¼-inch VTRs.

★ MEANS IT'S VERIFIED

TEKTRONIX, INC. ★
Box 500, DS 53-067, Beaverton, OR 97007
503 627-2229
Sync, black burst, color bar, multiburst & staircase ramp generators; NTSC & RGB monitors; demodulators; harmonic distortion meters, spectrum & sideband analyzers; video test signal generators, automatic VITS analyzers; waveform monitors, vectorscopes, oscilloscopes, delayed sweep scopes, multimeters & logic analyzers.
SEE AD PG. 11

TELE-CINE CORP., DIV. SCHNEIDER CORP. OF AMERICA ★
400 Crossways Park Dr., Woodbury, NY 11797
516 496-8500
Video camera lenses, lense extenders & filters; equipment rental service.
SEE AD PG. 87

TELE-COLOR PRODUCTIONS, INC. ★
150 S. Gordon St., Alexandria, VA 22304
703 823-2800
Studio & mobile teleproduction facilities; video post-production facility.

TELECTRO SYSTEMS CORP.
96-18 43 Ave., Corona, NY 11368
212 651-8900
Single & multiple audio cart player/recorders; tape duplicators; speakers.

TELEDYNE BIG BEAM ★
Box 518, 290 East Prairie, Crystal Lake, IL 60014
815 459-6100
Emergency lighting systems.

TELEDYNE CAMERA SYSTEMS ★
131 N. Fifth Ave., Arcadia, CA 91006
213 359-6691
Solid state cameras; video-to-16/35 mm film transfer systems.

TELEDYNE ENERGY SYSTEMS ★
110 W. Timonium Rd., Timonium, MD 21093
301 252-8220
Power generators.

TELE-IMAGE, INC. ★
5630 Beverly Hill, Houston, TX 77057
713 977-2635
Studio & mobile teleproduction facilities; video post-production facility.

TELE-IMAGE, INC. ★
2225 Beltline Rd., Ste. 321, Carrollton, TX 75006
214 245-3561
Studio & mobile teleproduction facilities; video post-production facility.

TELEMATION PRODUCTIONS, INC./ SEATTLE ★
1200 Stewart St., Seattle, WA 98112
206 623-5934
Studio & mobile teleproduction facilities; video post-production facility.

TELEMATION PRODUCTIONS, INC. ★
7700 East Iliff, Denver, CO 80231
303 751-6000
Studio & mobile teleproduction facilities; video post-production facility.

TELE-MEASUREMENTS, INC.
145 Main Ave., Clifton, NJ 07014
201 473-8822
Facility turnkey installations; mobile vehicle construction; studio design.

TELEMET, DIV. GEOTEL, INC. ★
185 Dixon Ave., Amityville, NY 11701
516 842-2300
RGB & encoded chromakeyers; parallel & serial interface routing switchers; sync, color bar, multiburst & staircase ramp generators; comb filter decoders; pulse amps & video DAs; modulators; telco & fiberoptic STLs; demodulators; video test signal generators. Audio DAs; monitor & power amps; VU meters.
SEE AD PG. 218

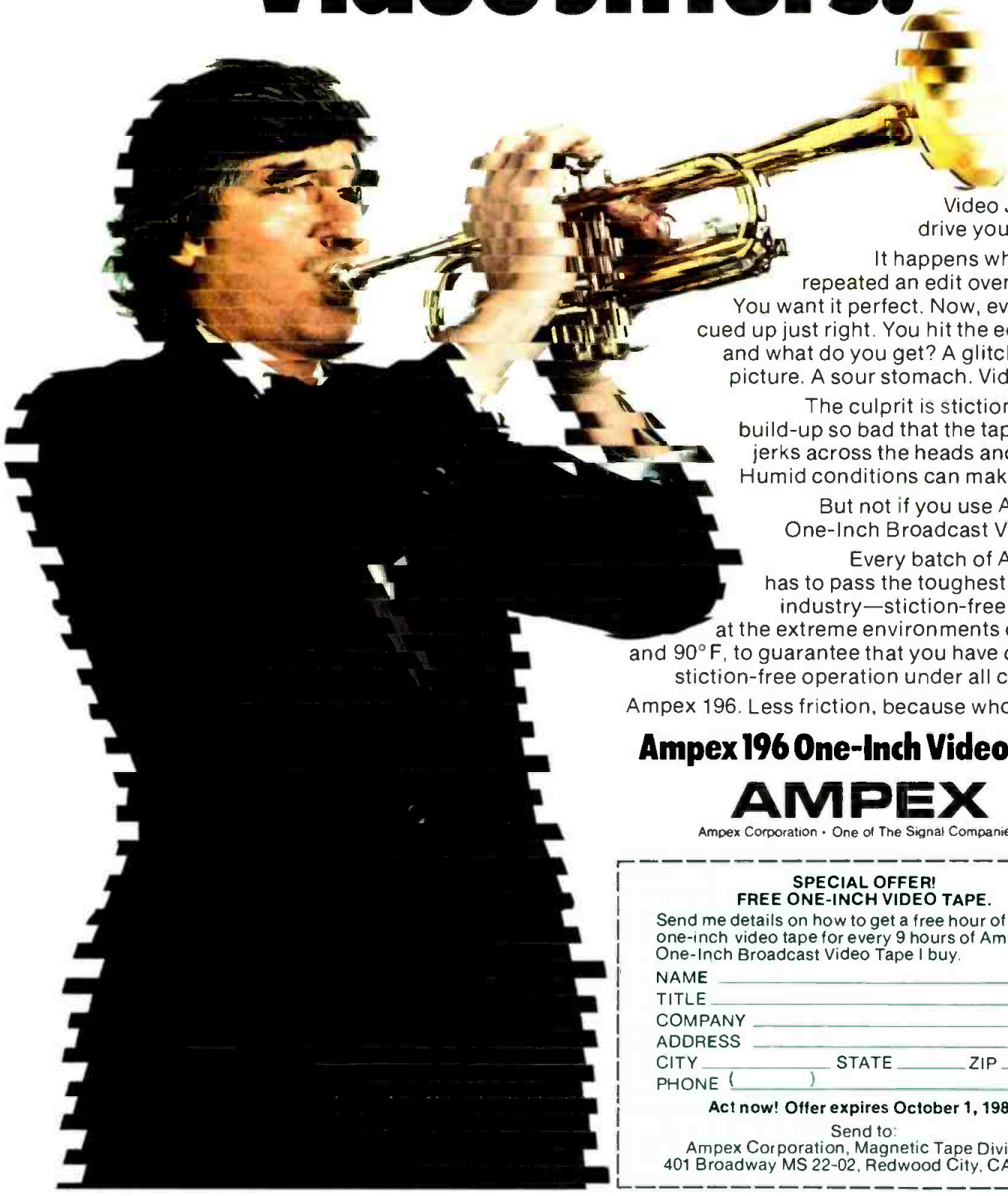
TELEPROMPTER PRODUCTIONS ★
5120 Broadway, New York, NY 10034
212 942-7200
Studio & mobile teleproduction facilities; video post-production facility.

TELESCRIPT, INC. ★
20 Insley St., Demarest, NJ 07627
201 567-2220
Monitor-based prompting systems.

TELESOURCE COMMUNICATIONS ★
Box 7132, Phoenix, AZ 85011
602 265-1232
Newsroom computers.

www.americanradiohistory.com

Ampex Announces the Practical End of Video Jitters.



Video Jitters can drive you up a wall.

It happens when you've repeated an edit over and over. You want it perfect. Now, everything's cued up just right. You hit the edit button, and what do you get? A glitch. A shaky picture. A sour stomach. Video Jitters.

The culprit is stiction—friction build-up so bad that the tape actually jerks across the heads and scanner. Humid conditions can make it worse.

But not if you use Ampex 196 One-Inch Broadcast Video Tape.

Every batch of Ampex 196 has to pass the toughest test in the industry—stiction-free operation at the extreme environments of 90% RH and 90° F, to guarantee that you have consistent stiction-free operation under all conditions.

Ampex 196. Less friction, because who needs it?

Ampex 196 One-Inch Video Tape.

AMPEX

Ampex Corporation · One of The Signal Companies

SPECIAL OFFER!
FREE ONE-INCH VIDEO TAPE.

Send me details on how to get a free hour of one-inch video tape for every 9 hours of Ampex 196 One-Inch Broadcast Video Tape I buy.

NAME _____
TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ STATE _____ ZIP _____
PHONE ( ) _____

Act now! Offer expires October 1, 1982.

Send to:
Ampex Corporation, Magnetic Tape Division
401 Broadway MS 22-02, Redwood City, CA 94063 BME

www.americanradiohistory.com

TELETRONICS ★
231 E. 55 St., New York, NY 10022
212 355-1600
Studio & mobile teleproduction facilities; video post-production facility.

TELEVISION ASSOCIATES, INC. ★
2410 Charleston Rd., Mountain View, CA 94043
415 967-6040
Studio & mobile teleproduction facilities; video post-production facility.

TELEVISION ENGINEERING CORP. ★
580 Goddard Ave., Chesterfield, MO 63017
314 532-4700
Facility turnkey supply & installation; mobile van construction; TV studio design.

TELEVISION EQUIPMENT ASSOCIATES (TEA) ★
Box 393, S. Salem, NY 10590
914 763-8893
Racal & BCA headphones & intercoms; dynamic, electret/condenser mics; Link audio DAs; Elcon video tape cleaner/evaluator; Matthey video filters & delay lines; video DAs; video color monitor calibrators; STR fiberoptic transmission systems; VG Electronics zone plate generators.
SEE AD PG. 178
Field Office:
CA 213 271-9570

TELEVISION GRAPHICS ★
555 Broad St., Glen Rock, NJ 07452
201 444-2911
Equipment rental service; mobile teleproduction facility.
SEE AD PG. 212

TELEVISION TECHNOLOGY CORP. ★
5970 W. 60 Ave., Arvada, CO 80003
303 423-1652
UHF, VHF, & LPTV transmitters & translators; RF amps, power dividers & modulators.
SEE AD PG. 172

TELEX COMMUNICATIONS, INC. ★
9600 Aldrich Ave. S., Minneapolis, MN 55420
612 884-4051
Cart player/recorders; 2,4-track studio ATRs; tape duplicators, tape-based loggers; test tapes; headphones, hardwired intercoms; dynamic, electret/condenser & lavalier mics; preamps; communication antennas; towers & masts, hardware & construction equipment.
SEE AD PG. 170

TELFAX COMMUNICATIONS ★
Box 31, Webster City, IA 50595
515 832-1263
Mic mixers, portable consoles; telco interface equipment; line amps.

TELONIC/BERKELEY
Box 277, Laguna Beach, CA 92652
714 494-9401
RF attenuators; sweep generators; RF filters; impedance bridges; dB meters; microwave systems.

TENNAPLEX SYSTEMS LTD. ★
34 Bentley Ave., Ottawa, Ont., K2E 6T8 Canada
613 226-5870
RF switches, filters & diplexers; FM, TV (HP & CP) & communication antennas.

TENTEL CORP. ★
1506 Dell Ave., Campbell, CA 95008
408 379-1881
Audio & video tape alignment & tension gauges; spindle height gauges.

TEPCO CORP. ★
Box 680, Rapid City, SD 57709
605 343-7200
LPTV transmitters & translators; RF filters, modulators; TV SCA equipment; program subcarrier equipment.

TERRACOM, DIV. LORAL CORP.
9020 Balboa Ave., San Diego, CA 92123
714 278-4100
Microwave STLs; portable & mobile ENG microwave systems; digital microwave systems for audio & slowscan video; digital audio channel multiplexers.

TEXAS ELECTRONICS, INC. ★
Box 7225, Dallas, TX 75209
214 631-2490
Weather information & equipment services.

TEXSCAN CORP.
2960 Grand Ave., Phoenix, AZ 85017
602 252-5021
Character generators, on-screen drawing systems; RF amps, attenuators & filters; impedance bridges, spectrum analyzers & oscilloscopes.

TEXWIPE ★
650 Crescent Ave., Upper Saddle River, NJ 07458
201 327-5577
Audio & video head cleaners.

TFT, INC. ★
3090 Oakmead Village Dr., Santa Clara, CA 95051
408 727-7272
EBS two-tone systems; remote control systems; microwave STLs; FM & TV SCA equipment; demodulators, modulation & frequency monitors; status alarm indicators.
SEE AD PG. 198
Field Office:
PA Tom Creighton, 1355 Jeanette Way, Southampton 18966 ..... 215 322-8911
Refer to Reps/Distributors section

THALNER ELECTRONIC LABORATORIES ★
7235 Jackson Rd., Ann Arbor, MI 48103
313 761-4506
Character generators; countdown generators; counters, timers, screen splitters & time/date generators.

THEATRE SERVICE & SUPPLY CORP. ★
1792 Union Ave., Baltimore, MD 21211
301 467-1225
Studio lighting, cycs, support equipment.

THEATRE TECHNIQUES, INC. ★
60 Connolly Pkwy., Hamden, CT 06514
203 281-6111
Hardwired intercoms; manual & automatic light dimmer controls; patch panels.

THEATRICAL SERVICES, INC. ★
128 S. Washington, Wichita, KS 67202
316 263-4415
Lighting control boards & dimmer packs, diffusion & efx materials, lighting fixtures.

THERMODYNE INTL., LTD. ★
20850 S. Alameda St., Long Beach, CA 90810
213 603-1976
Foam insert and rack configuration equipment transportation cases.

THIRD COAST VIDEO, INC. ★
501 North I. H. 35, Austin, TX 78702
512 473-2020
Studio & mobile teleproduction facilities; video post-production faciliy.

THOMSON-CSF BROADCAST, INC. ★
37 Brownhouse Rd., Stamford, CT 06902
203 327-7700
ALC & AGC amps, AM & FM compressor/limiters; presence equalizers; audio DAs. Studio, lightweight, ENG & field cameras; character generators, digital art/paint systems, framestores, bit pad digitizers & weather symbol inserters; title, downstream & non-additive keyers; TBCs, field & frame synchronizers, TBC framestores, noise reducers, image enhancers, color correctors & video multiprocessors; graphics composing services.
SEE AD PG. 30-31
Field Offices:
CA Mike Clayton, 1919 W. Magnolia Blvd. Burbank 91506 ..... 213 849-2188
FL Marty McGreevy, 5778 Grand Lagoon Blvd., Pensacola 35207 ..... 904 492-2870
GA Frank Benson, 107 Tuliptree Terr., Peachtree City 32069 ..... 404 487-6756
IL Tom Lorenzen, 7644 Rae Lane, Gurnee 60031 ..... 312 356-5575
VA Al Audick, 8519 Buckboard Dr., Alexandria 22308 ..... 202 296-9189

★ MEANS IT'S VERIFIED

THOMSON-CSF ELECTRON TUBE DIV. ★
301 N. 17, Rutherford, NJ 07070
201 438-2300
Pickup tubes; vacuum tubes.
SEE AD PG. 147

THOR ELECTRONICS CORP.
321 Pennsylvania Ave., Box 707, Linden, NJ 07036
201 486-3300
Vacuum tubes, solid state components, rectifiers & surge protectors.

TIFFEN MFG. CO., INC. ★
90 Oser Ave., Hauppauge, NY 11788
516 273-2500
Special effects and color correction filters for cine & video cameras; audio cassette player/recorders.
SEE AD PG. 33
Refer to Reps/Distributors section

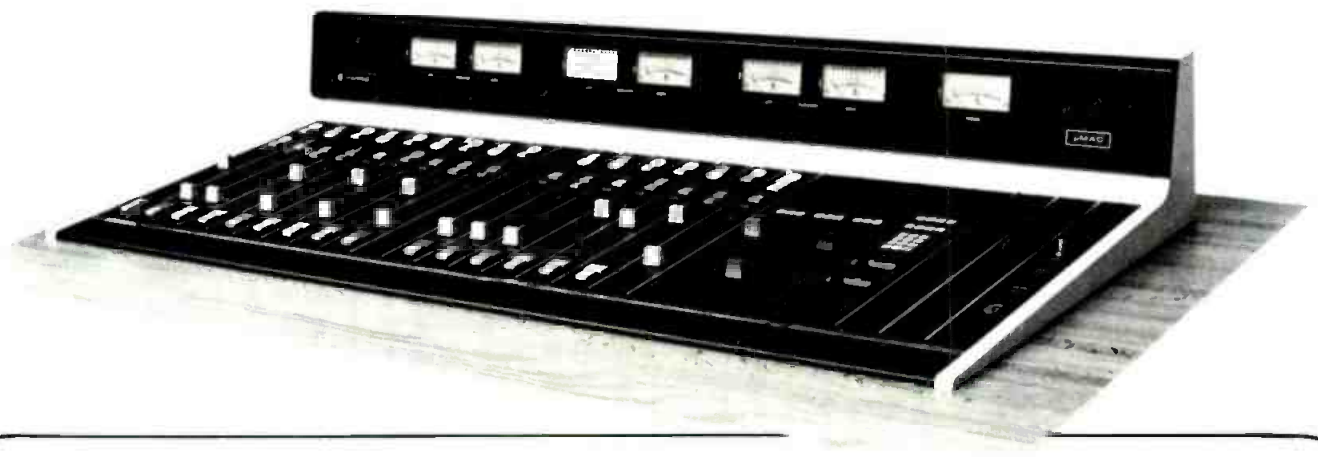
TIMES FIBER COMMUNICATIONS, INC.
358 Hall Ave., Box 384, Wallingford, CT 06492
800 243-6904
Fiberoptic transmission and interconnect systems; coaxial transmission line & connectors.

TMD, DIV. THE WILL-BURR CO.
Box 126, Wooster, OH 44691
216 262-7010
Pneumatic telescoping masts for ENG.

www.americanradiohistory.com

First in reliability . . .
second to none in talent assist . . .

Harris MICRO MAC Audio Console



Reliability. It's your first priority in audio consoles, and Harris made it theirs in the MICRO MAC.

The 99.999% microprocessor reliability claim is based on over 400 Harris microprocessor based systems already working long hours in the field. That's real "uptime" experience.

The advanced attenuator, engineered of selected components, is designed to last 20 years.

And now your talent can ply their craft without undue distraction. MICRO MAC systematically eliminates common operator errors *before* they happen. So air personalities may exercise full creative freedom—no worrying about source, sequence, knobs and switches.

MICRO MAC's software control provides convenient enhancement features...built-in flexibility and adaptability for future digitized audio. All without mainframe changes!

For all its exceptional and unique features, the Harris MICRO MAC audio console is surprisingly competitive in price.

Find out more. Write Harris Corporation, Broadcast Products Division, P.O. Box 4290, Quincy, Illinois 62305-4290. 217-222-8200.

HARRIS

Circle 188 on Reader Service Card

www.americanradiohistory.com

TM SYSTEMS, INC. ★
25 Allen St., Bridgeport, CT 06604
203 366-4571
Line amps, amp power supplies; VU & dB meters; conditioning equipment.

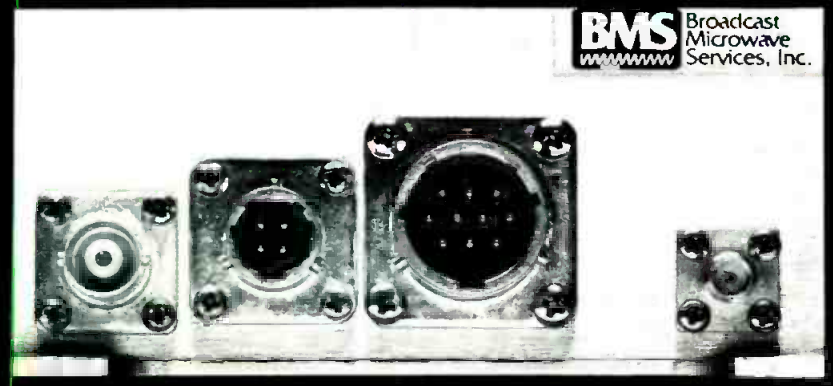
TODAY VIDEO, INC. ★
45 W. 45 St., New York, NY 10036
212 391-1020
Teleproduction & post-production facilities.

TOPAZ, INC. POWERMARK DIV. ★
3855 Ruffin Rd., San Diego, CA 92123
619 565-8363
Inverters, converters; surge protectors.

TOPAZ, INC. TOPAZ ELECTRONICS DIV. ★
9192 Topaz Way, San Diego, CA 92123
619 279-0831
Power conditioners; transformers & surge protectors.

TORPEY CONTROLS & ENGINEERING, LTD. ★
2220 Midland Ave. #98, Scarborough, Ont., M1P 3E6 Canada
416 298-7788
Character generators; serial interface machine control system; digital clocks, master/slave clocks, time distribution, timers & time comparators.

less is MORE*



BMS Broadcast Microwave Services, Inc.

*This is the actual size of our 50 series frequency-agile ENG microwave radios. They are 2-12 watt power programable over 21 channels and weigh only 2 pounds making them the smallest and lightest available to the broadcast industry.

BMS, the news and sports microwave people, knows live coverage demands complete portability from ENG equipment. Whether quick-mounted on a camera, in a flight pack or news vehicle, these totally portable units take you where the action is— quickly and efficiently.

BMS offers complete ENG microwave systems including the most innovative antenna systems in the industry. We customize each system to your broadcasting needs.

If you're considering updating your ENG equipment, it pays to talk to BMS.

BMS Broadcast Microwave Services, Inc.

7320 Convoy Ct. San Diego, CA 92111 ph. (714) 560-8601

Circle 189 on Reader Service Card

TOSHIBA AMERICA, INC. ★
2441 Michelle Dr., Tuscan, CA 92680
714 730-5000
Studio & ENG/EFP cameras; production switchers, digital effects processors; frame synchronizers, audio/video delay systems.

TOWNSEND ASSOCIATES, INC. ★
Mainline Dr. Industrial Park, Box 1122, Westfield, MA 01086
413 562-5055
UHF, VHF & LPTV transmitters & translators; TV exciters.

TPC COMMUNICATIONS, INC. ★
Production Plaza, Sewickley, PA 15143
412 771-4700
Studio & mobile teleproduction facilities; video post-production facility.

TRANS-AMERICAN VIDEO, INC. (TAV) ★
1541 N. Vine St., Hollywood, CA 90028
213 466-2141
Studio & mobile teleproduction facilities; video post-production facility.

★ MEANS IT'S VERIFIED

TRANSIST-O-SOUND ★
728 Yosemite Dr., Indianapolis, IN 46217
317 787-8491
Mic mixers.

TREPAC DATATONE ★
547 Windsor St., Reading, PA 19601
215 374-3439
Audio/video automatic line program alarm; tone status reporting & control modules.

TRIDENT (USA), INC. ★
652 Glenbrook Rd., Stamford, CT 06906
203 357-8337
Portable, mono & stereo, automated & audio for TV mixing consoles; parametric equalizers; digital special effects, digital & analog delay & reverb, time compression/expansion.

TRI-EX TOWER CORP.
Box 5009, 7182 Rasmussen Ave., Visalia, CA 93278
209 625-9400
Towers, masts.

TRITRONICS, INC. ★
733 N. Victory Blvd., Burbank, CA 91505
800 423-3640
Motion analysis TV cameras, color video monitors; telecines; motion analysis & microscope camera systems; telecine islands; NTSC color monitors.

TRI VIDEO PRODUCTIONS ★
Box 8822, Incline Village, NV 89450
702 323-6868
Mobile video production facility.

TROMPETER ELECTRONICS, INC. ★
8936 Comanche Ave., Chatsworth, CA 91311
213 882-1020
Audio patch panels.

www.americanradiohistory.com

TRUE TIME INSTRUMENTS ★
3243 Santa Rosa Ave., Santa Rosa, CA 95401
707 528-1230
Phase comparators; time code receivers.

TTE, INC. ★
2212-14 S. Barry Ave., Los Angeles, CA 90064
213 478-8224
Comb filter decoders, video filters; RF filters; transformers.

TUNGSTONE BATTERIES, INC.
18 Billings St., Sharon, MA 02067
617 784-2000
Nicad, silver-zinc & lead-acid batteries & chargers; inverters & converters.

TVI ★
5426 Fair Ave., N. Hollywood, CA 91601
213 769-0928
Hardwired intercoms; lighting control boards, quartz fixtures, dimer packs & cyc lighting; scenery construction, rigging & prop material; lighting & ac cable, jackfields; equipment rental & studio & set design

TVNS
Suite 250R, World Trade Center, San Francisca, CA 94111
415 982-3073
TV newsroom computer systems.

TWEED AUDIO USA, INC. ★
12 Ilex Dr., Newbury Park, CA, 91320
805 499-4764
Mic mixers; portable, mono & stereo, automated & audio for TV mixing consoles; AM & FM compressor/limiters, parametric & graphic equalizers; noise reduction; hardwired intercoms; preamps, line, monitor & power amps, audio DAs & amp power supplies; audio patch panels; remote control systems; studio furniture & equipment racks; facility turnkey installations, studio design, engineering consultation & mobile vehicle construction.

UAB PRODUCTIONS ★
8443 Day Dr., Cleveland, OH 44129
216 845-6043
Studio & mobile teleproduction facilities; video post-production facility.

UHF ASSOCIATES ★
5625 State Farm Dr. #4, Rahnert Park, CA 94928
707 584-7844
RF modulators.

ULTIMATTE CORP. ★
18607 Topham St., Reseda, CA 91335
213 345-5525
Encoded chromakeyers.
SEE AD PG. 183

ULTRA AUDIO PIXTEC (DIV. AUDIO INT'L, INC.) ★
Box 921, Beverly Hills, CA 90213
213 651-5563
Mic mixers; portable, studio & TV audio consoles; monitor & power amps, audio DAs; parallel interface routing switchers; waveform monitors & vectorscopes.

UMC ELECTRONICS CO. ★
460 Sackett Point Rd., North Haven, CT 06473
203 288-7731
Portable & studio consoles; single & multiple cart player/recorders; phase control matrixing; replacement heads; alignment & tension gauges; bulk erasers & splice finders; complete program automation systems.
SEE AD PG. 98

★ MEANS IT'S VERIFIED

UNIDYNE DIRECT MAIL ★
Box 19060, San Diego, CA 92119
714 588-6747
Promotion & advertising for radio & TV.

UNION CONNECTOR CO., INC. ★
149 Babylon Tpk., Box H, Roosevelt, NY 11575
516 623-7461
Lighting patch bays; lighting plugs/connectors; electrical connectors.

UNI-SET CORP. ★
449 Ave. A, Rochester, NY 14621
716 544-3820
Modular studio set design.

Plan to be at Inter BEE

Inter BEE

1982 International Broadcast Equipment Exhibition in Japan.

The date: November 9 through November 11.
The place: Tokyo Ryutsu Center (TRC)

The attraction: Everyone in Broadcasting in Japan and visitors from other countries will be coming to see and take part in the only event that draws all broadcasters to Tokyo. Broadcasting equipment of the latest design will be exhibited by leading Japanese, American and European manufacturers. So plan now to be at Inter BEE 82.

Sponsor: Electronic Industries Association of Japan
Co-Sponsor: The National Association of Commercial Broadcasters in Japan
NHK (Japan Broadcasting Corporation)
Management: JAPAN ELECTRONICS SHOW ASSOCIATION
No 24 Mori Bldg., 3-23-5, Nishi-Shimbashi, Minato-ku, Tokyo, Japan

www.americanradiohistory.com

TRANSLATORS.
TRANSMITTERS.
TURNKEY SYSTEMS.

*LPTV
*ITFS
*MDS

From reliable VHF and UHF TV translators to innovative multi-channel MDS installations, EMCEE is there. Providing hardware. System planning. And installation. To learn more about how EMCEE can meet the requirements of your station, contact David Parmelee, Director of Marketing and Sales.

EMCEE
BROADCAST® PRODUCTS
a division of
ELECTRONICS, MISSILES & COMMUNICATIONS, INC.
P.O. Box 68
White Haven, PA 18661
Call toll free 800-233-6193
(In PA 717-443-9575)
TWX 510-655-7088
Ans EMCEE WHHV

IT'S NOT JUST HOW IT WORKS. BUT HOW LONG IT WORKS.

®Registered EMCEE Broadcast Products trademark
©1982 EMCEE Broadcast Products

Circle 190 on Reader Service Card

MANUFACTURERS

UNITED MEDIA, INC. ★
4075 Leaverton Ct., Anaheim, CA 92807
714 630-8020
ADR looping controller; parallel & serial interface routing switchers; editor/controllers, multisource editors, SMPTE time code readers, generators & synchronizers, proprietary time code systems; time distribution; engineering consultant & financial services.

UNITED PRESS INTERNATIONAL ★
220 E. 42 St., New York, NY 10017
212 850-8600
Wire services, radio news networks, photo services.

UNITED RECORDING ELECTRONICS IND. (UREI) ★
8460 San Fernando Rd., Sun Valley, CA 91352
213 767-1000
Portable & stereo studio consoles; ALC & AGC amps; AM & FM compressor/limiters, parametric & graphic equalizers & noise reduction systems; speakers; preamps, monitor & power amps; slide attenuators; audio test signal generators; chart recorders; digital metronomes; transformers; recording studio, video post-production facility.
SEE AD PG. 181
Refer to Reps/Distributors section

UNITED RESEARCH LAB ★
16 E. 52 St., New York, NY 10022
212 751-4663
2,4-track studio ATRs & replacement heads.

★ MEANS IT'S VERIFIED

UNITEL VIDEO, INC. ★
510 W. 57 St., New York, NY 10019
212 265-3600
Studio & mobile teleproduction facilities; video post-production facility.

UNR-ROHN, DIV. UNR, INC. ★
Box 2000, Peoria, IL 61656
309 697-4400
Towers, hardware & construction equipment; tower lighting.

URSA MAJOR, INC. ★
Box 18, 50 Trapelo Rd., Belmont, MA 02178
617 489-0303
Digital audio special effects & digital reverb.

U.S. TAPE & LABEL CORP. ★
1561 Fairview Ave., St. Louis, MO 63132
314 423-4411
Custom pressure-sensitive labels & promotions.

UTAH SCIENTIFIC, INC., A DYNATECH CO.
2276 S. 2700 W., Salt Lake City, UT 84119
800 453-8982
Serial interface routing switchers & machine control systems.
SEE AD PG. 221
Field Office:
Eric King 804 384-7001

UTILITY TOWER CO. ★
3200 NW 38, Box 12369, Oklahoma City, OK 73157
405 946-5551
Towers, masts, hardware & construction equipment; tower lighting.

VACUUM TUBE INDUSTRIES, INC.
Box 249, 35 Pequit St., Canton, MA 02021
617 828-1650
Vacuum tubes.

VALENTINO MUSIC LIBRARY
151 W. 46 St., New York, NY 10036
212 246-4675
Audio post-production facility, recording studio & music library.

VALLEY PEOPLE, INC. ★
Box 40306/2820 Erica Pl., Nashville, TN 37204
615 383-4737
Complete program automation systems; ALC & AGC amps; AM & FM compressor/limiters, parametric equalizers & noise reduction; preamps, line amps; engineering consultant.

VALTEC ★
99 Hartwell St., W. Boylston, MA 01583
617 835-6082
Fiberoptic STLs.

VAMCO ENGINEERING, INC. ★
11104 E. 56 St., Tulsa, OK 74145
918 252-5448
Audio & video DAs; parallel & serial interface routing switchers & machine control systems; remote control systems; engineering consultant.

V.A.M.P., INC. ★
6753 Selma Ave., Los Angeles, CA 90028
213 466-5533
Speakers; video isolation amps; monochrome, NTSC color & dc portable video monitors; humbucking coils & transformers.

VAN LADDER, INC.
Box 5108, Spencer, IA 51301
800 831-5051
Aerial lifts.

VANNER, INC.
2136 Eakin Rd., Columbus, OH 43223
614 272-6263
Power inverters & converters.

VERSA COUNT ENGINEERING, INC.
533 Lively Blvd., Elk Grove Village, IL 60007
312 593-0208
Video proc amps; FM, TV translators; FM transmitters; exciters; RF amps; modulation monitors; audio DAs; intercity microwave equipment; microwave STLs.

VERSATILE VIDEO, INC. ★
151 Gibraltar Ct., Sunnyvale, CA 94086
408 734-5550
Video post-production & mobile production facility.

VIA VIDEO, INC. ★
10115 S. DeAnza Blvd., Cupertino, CA 95014
408 996-2055
Digital art/paint system, camera-based digitizer; NTSC encoder, sync generator.

www.americanradiohistory.com

MANUFACTURERS

VIDAIRE ELECTRONICS MFG. CORP. ★
150 Buffalo Ave., Box 788, Freeport, NY 11520
516 623-6696
Headphones & RF intercoms; dynamic, electret/condenser mics; rotary attenuators; multimeters; audio cable, connectors.

VIDCOM ★
2426 Townsgate Rd., Ste. K, Westlake Village, CA 91361
213 991-1974
Mobile production facilities.

VIDEO AIDS OF COLORADO ★
1930 Central Ave., Boulder, CO 80301
303 443-4950
Hardwired intercoms; sync & black burst generators; pulse amps & video DAs; phase meters; burst phase meters.

VIDEO ASSOCIATES LABS, INC.
2304 Hancock #1-F, Austin, TX 78756
512 459-5684
Character, slate & graphics generators & keyers.

VIDEO CENTRAL PRODUCTIONS ★
112 N. Collett, Dallas, TX 75214
214 824-0942
Studio & mobile teleproduction facilities.

VIDEOCOM, INC. ★
502 Sprague St., Dedham, MA 02026
617 329-4080
Studio & mobile teleproduction facilities; video post-production facility.

VIDEO CORP. OF AMERICA (VCA) ★
1913 Route 27, Edison, NJ 08823
201 572-3300
Audio & video equipment rental; video post-production facility; engineering consultant.

VIDEO DATA SYSTEMS
205 Oser Ave., Hauppauge, NY 11787
516 231-4400
Character generator systems; production titlers.

THE VIDEOGRAPHY CO. & STUDIOS ★
8928 Ellis Ave., Los Angeles, CA 90034
213 204-2000
Studio & mobile teleproduction facilities; video post-production facility.

VIDEO IMAGES, INC. ★
8409 Dixon Ave., Silver Springs, MD 20910
301 565-3310
Studio & mobile teleproduction facilities; video post-production facility.

VIDEOMAGNETICS, INC.
155 San Lazaro, Sunnyvale, CA 94086
408 737-8300
New VTR heads; head refurbishing; pneumatic cassette changer.

VIDEOMEDIA ★
211 Weddell Dr., Sunnyvale, CA 94086
408 745-1700
Video editor/controllers & multisource editors; SMPTE & proprietary time code systems.

VIDEO ONE ★
10834 Burbank Blvd., D 201, N. Hollywood, CA 91601
213 980-0704
Mobile video production facility.

The first 9-bit frame synchronizer is still the best.

When we introduced the FS-16 in 1980, we expected our competitors would rush to copy it.

But while all of them have copied some of the FS-16's features, none of them have matched it.

So, we still offer the only 3"x19" rack-mounting frame synchronizer with the unsurpassed clarity of 9-bit quantization. As well as features like full proc-amp controls. Integral freeze-frame/field. Data rotation and a built-in memory analyzer, to keep you on the air. And a price that's surprisingly low.

When you want the best, call NEC.

NEC

NEC America, Inc.
Broadcast Equipment Division
130 Martin Lane
Elk Grove Village, IL 60007

Call toll-free: 1-800-323-6656.
In Illinois, call (312) 640-3792

Circle 191 on Reader Service Card

you say it, we play it.

Programming that really sells—That's where BPI's live-assist plan comes in. With 10 constantly updated formats to choose from, select the preprogrammed, unannounced music that's right for your station. Live back up is provided by *your* on-air personalities. The result is a clean, consistent, professional sound.

With BPI's help, you'll have the best of both worlds—The programming control and easy operation of automation *and* the spontaneity and community rapport of live radio. Better programming brings increased market shares. *And*, more production and sales time for your staff.

CALL TOLL FREE 1-800-426-9082
Call Collect (206) 676-1400
P.O. Box 547
Bellingham, WA 98227

music is BPI

Circle 192 on Reader Service Card

www.americanradiohistory.com

Continental's 1 kW AM Power Rock: a sound winner that's ready for AM stereo.

Tough market or not, the Power Rock is designed to give you the best signal around. Listen to the loud, clear signal, and you know you have a winner. The Power Rock is ready for AM Stereo and accepts sophisticated audio. Conservatively-rated components give you an extra margin of safety for steady and reliable on-air performance.

For information, call 214/381-7161
Continental Electronics Mfg. Co.
Box 270879 Dallas, TX 75227

Continental Electronics

Send me 1 kW AM Power Rock brochure
Name _____
Station _____
Address _____
City _____
State/Zip _____
Phone (___) _____
© 1982 Continental Electronics Mfg. Co./4966

Circle 193 on Reader Service Card

MANUFACTURERS

VIDEO POST & TRANSFER ★
8036 Aviation Pl., Box 53, Dallas, TX 75235
214 350-2676
Video post-production facility.

VIDEOSMITH ★
2400 Chestnut St., Philadelphia, PA 19103
215 864-0658
Studio & mobile teleproduction facilities; video post-production facility.

THE VIDEO TAPE CO. ★
10545 Burbank Blvd., N. Hollywood, CA 91601
213 985-1666
Video post-production facility.

VIDEOTEK, INC. ★
125 N. York St., Pottstown, PA 19464
215 327-2292
Audio program monitors; NTSC, RGB & dc portable video monitors; demodulators; waveform monitors & vectorscopes.
SEE AD PG. 42
Field Office:
AZ 9625 North 21st Dr.,
Phoenix 85021 . . . . . 602 997-7523

VIDEOTEX/AMERICA
2050 Center Ave., Ste. 200, Fort Lee, NJ 07024
201 461-0217
Hardware & software for videotext systems.

VIDEO TRANSITIONS ★
920 N. Citrus Ave., Hollywood, CA 90038
213 465-3333
Video post-production facility.

VIDEO WEST ★
130 Social Hall Ave., Salt Lake City, UT 84111
801 237-2526
Studio & mobile teleproduction facilities; video post-production facility.

VIDICRAFT, INC.
0704 SW Bancroft St., Portland, OR 97201
503 223-4884
Image enhancers; video DAs; color proc amp; guard stabilizer; guard stabilizer with RF converter; RF modulator; commercial alert; video fader.

VIF INTERNATIONAL ★
Box 1555, Mountain View, CA 94042
408 739-9740
Portable & 2,4-track studio ATRs; replacement audio heads; audio test tapes, bulk erasers; phono cartridges; relay sequencers; ALC & AGC amps, AM & FM compressor/limiters, parametric equalizers; monitor speakers, headphones. Tower hardware, construction equipment; tape-based loggers.

VISCOUNT INDUSTRIES, LTD.
105 E. 69 Ave., Vancouver, BC V5X 2W9, Canada
604 327-9446
Video DAs; routing switchers; manual master control switchers; small & portable production switchers; special effects generators.
SEE AD PG. 110

VISUAL INFORMATION INSTITUTE, INC. ★
Box 33, Xenia, OH 45385
513 376-4361
Sync, color bar, multiburst & staircase ramp generators; signal multiplexers; video test signal generators.

VISION-SOUND, INC.
110 Grand Avenue, Englewood, NJ 07631
201 871-4101
Audio equipment rentals & sales.

VITAL INDUSTRIES, INC. ★
3700 NE 53 Ave., Gainesville, FL 32601
904 378-1581
Large, small & automated production switchers, chromakeyers & title keyers, special effects generators; digital effects processors; audio DAs; manual, automated & business automation interfaced master control switchers; serial interface routing switchers; SMPTE time code readers, generators & synchronizers; pulse amps & video DAs; financial services.
Field Office:
CA Ste. 1118, 16 Vine St.,
Hollywood 90028 . . . . . 213 463-7393

VLSI
Box 1434, Los Gatos, CA 95030
408 356-1031
Engineering consultant.

WALLACH & ASSOC., INC. ★
Box 18167, Cleveland, OH 44118
216 575-0765
Audio carts, empty reels & tape storage units.

★ MEANS IT'S VERIFIED

WARD-BECK SYSTEMS, LTD. ★
841 Progress Ave., Scarborough, Ont., M1H 2X4 Canada
416 438-6550
Portable, mono & stereo & audio for TV mixing consoles; ALC & AGC amps, parametric equalizers; hardwired intercoms; preamps, line, monitor & power amps; audio DAs & amp power supplies; audio patch panels & VU meters.
SEE AD COVER 4
Field Offices:
MA William McFadden, 755 Washington St.,
Annisquam 01930 . . . . . 617 283-7507
TX Duke McLane, 4012 Mendenhall Dr.,
Dallas 75234 . . . . . 214 241-5999
Refer to Reps/Distributors section

WATERS MANUFACTURING, INC. ★
Longfellow Center, Wayland, MA 01778
617 893-6900
Rotary & slide attenuators.

WAVETEK INDIANA, INC.
Box 190, 5808 Churchman, Beech Grove, IN 46107
317 787-3332
RF attenuators; video test signal generators; oscilloscopes.

WAVETEK ROCKLAND, INC.
Rockleigh Ind. Ct., Rockleigh, NJ 07647
201 767-7900
Active equalizers & filters, audio & RF; sideband analyzers; spectrum analyzers; frequency synthesizers.

www.americanradiohistory.com

I Guess You Could Say Comrex Got It All Together

Until now, if you had to cover a sports event, political speech, or just conduct a simple interview, your announcer or newsman needed eight arms or two small boys to carry the gear and set it all up, plus get it all working.

Not any more. . .

The new COMREX SLX has everything you need or are likely to need all in one neat portable package.

- Four mixing channels with two tape inputs.
- Three headphone monitor channels with custom monitor mixing.
- Instantaneous communications and program cue.
- The revolutionary COMREX low frequency extender with hi-frequency enhancer built-in.
- Multiple program outputs for feeding dial lines, program loops, RPU equipment and microwave or satellite links.
- Built-in compressor/limiter.
- Telephone dial interface built-in.
- Rugged all-metal construction, 3½ inch VU meter, optional dialer and much more.

COMREX

P.O. Box 269, 60 Union Ave., Sudbury, MA 01776
TEL: (617) 443-8811, TWX: 710-347-1049

. . . SO SAVE MONEY, STREAMLINE YOUR REMOTES AND IMPRESS THE SPONSOR BY GETTING IT ALL TOGETHER WITH THE COMREX SLX.

Circle 194 on Reader Service Card

www.americanradiohistory.com

WEATHERMATION
See listing for SATELLITE BROADCAST NETWORK

WEATHERSCAN INTERNATIONAL
2445 NW 39 St. Expy., Oklahoma City, OK 73112
405 521-9081
Weather information services; broadcast-quality weather graphics.

WEATHER SERVICES INTERNATIONAL CORP.
131 The Great Rd., Box B, Bedford, MA 01730
617 275-5300
Weather & sports information services.

WESTEC AUDIO VIDEO, INC.
1841 Broadway, Ste. 1203, New York, NY 10023
212 586-1662
Equipment rental service; audio & video post-production facilities; recording studio; engineering consultant.

WESTERN TELE-COMMUNICATIONS, INC.
Box 22595, Wellshire Sta., Denver, CO 80222
303 771-8200
Satellite communication sevice; microwave & fiberoptic systems.

WESTERN UNION
1 Lake St., Upper Saddle River, NJ 07658
201 825-5000
Digital & analog video & audio transmission via satellite.

WESTERN VIDEOTAPE PRODUCTIONS ★
101 Howard St., Ste. B, San Francisco, CA 94105
415 543-2810
Teleproduction & post-production facilities.

WESTINGHOUSE ELECTRIC CORP., IGT DIV. ★
Westinghouse Circle, Horseheads, NY 14845
607 796-3211
Single tube & monochrome video cameras; vacuum tubes.

WESTLAKE AUDIO, INC. ★
2696 Lauery Ct., Bldg. 18, Newbury Park, CA 91320
805 499-3686
Speakers; stereo headphone interface box.

WESTON INSTRUMENTS ★
614 Frelinghuysen Ave., Newark, NJ 07114
201 242-2600
VU & PPM meters, LED & video monitor displays; frequency monitors, controllers; voltmeters, multimeters & dB meters.

WGN CONTINENTAL PRODUCTIONS CO. ★
2501 W. Bradley Pl., Chicago, IL 60618
312 883-3411
Studio & mobile teleproduction facilities; video post-production facility.

WHITE INSTRUMENTS, INC.
Box 698, Austin, TX 78767
512 892-0752
Graphic equalizers; real time analyzers; pink noise generators.

WICKERWORKS VIDEO PRODUCTIONS, INC. ★
7342 S. Alton Way, Englewood, CO 80122
303 741-3400
Teleproduction & post-production facilities.

WIDE BAND ENGINEERING CO., INC. ★
Box 21652, Phoenix, AZ 85016
602 254-1570
RF test instruments.

WIDE RANGE ELECTRONICS CORP. ★
2119 Schuetz Rd., St. Louis, MO 63141
314 567-5366
Sprocketed magnetic film transporters; head degaussers & bulk erasers; SMPTE time code generators & readers.

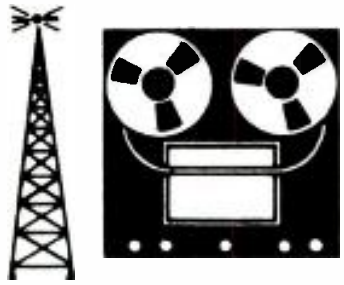
WILKINSON ELECTRONICS
See listing for TELEVISON TECHNOLOGY CORP.

WINDSOR TOTAL VIDEO ★
564 Fifth Ave., New York, NY 10017
212 725-8080
Studio & mobile teleproduction facilities; video post-production facility.

Technics

E.F.I.

BROADCAST ELECTRONICS



R.F. AUDIO/VIDEO

STANTON
THE CHOICE OF THE PROFESSIONALS™

AUDIO-PATH
Engineering, Inc.

SENNHEISER

SPENCER BROADCAST

Sales and Full Engineering Services
Offering AMPEX Thru XEDIT

60 major lines for the Broadcaster, and growing

For further information, contact Chuck Spencer.

SPENCER BROADCAST
2338 W. Royal Palm, Phoenix, AZ 85021
(602) 242-2211

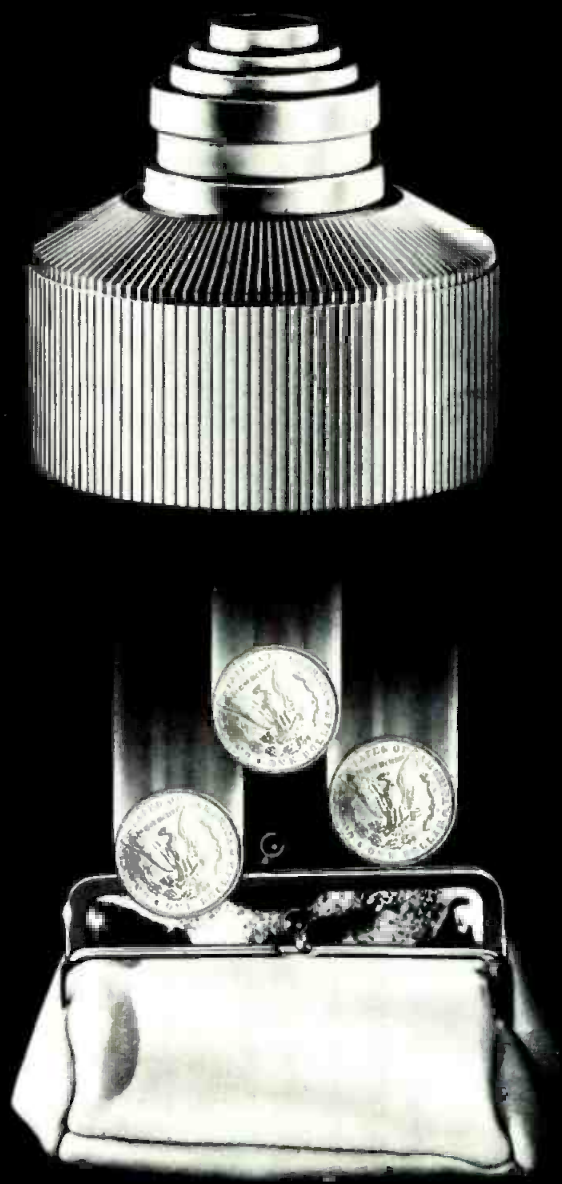
We Service What We Sell *"Competitive Pricing"*

Circle 195 on Reader Service Card

www.americanradiohistory.com

SAVE A BUCK !

ECONOMY MEANS THOMSON-CSF UHF-TV TETRODES AND CIRCUIT ASSEMBLIES



To save a buck, and even a bundle, check out THOMSON-CSF advanced-design Pyrobloc®-grid tetrodes. Featuring the highest electrical efficiency, extra-high gain and superior linearity, they're a sure way to beat soaring energy costs.
Some of the most in-demand models are the 5-kW* TH 393, the 10-kW* TH 382, and the TH 582, which delivers up to 20 kW*. And all of them are available with matched THOMSON-CSF coaxial-cavity circuit assemblies, for an added assurance of top-quality performance. Don't wait! The sooner you install THOMSON-CSF tetrodes, the sooner your savings will start.

*In video-carrier amplification alone.

THOMSON-CSF
COMPONENTS

THOMSON-CSF COMPONENTS CORPORATION ELECTRON TUBE DIVISION
301, ROUTE SEVENTEEN NORTH · RUTHERFORD, NEW JERSEY 07070 · TEL: (1.201) 438.23.00
TWX: 710 989.72.86

BRAZIL
THOMSON CSF
COMPONENTES DO BRASIL Ltda
SAO PAULO (11) 542.47.22

FRANCE
THOMSON CSF
DIVISION TUBES ELECTRONIQUES
BOULOGNE-BILLANCOURT
TEL. : (1) 604.81.75

GERMANY
THOMSON CSF
BAUELEMENTE GmbH
MÜNCHEN (89) 75.10.84

UNITED KINGDOM
THOMSON-CSF
COMPONENTS AND
MATERIALS Ltd
BASINGSTOKE (256) 29.155

ITALY
THOMSON CSF
COMPONENTI
ROMA (6) 638.14.58

SPAIN
THOMSON CSF
COMPONENTES
Y TUBOS S.A.
MADRID (1) 419.88.42

SWEDEN
THOMSON CSF
KOMPONENTER
& ELEKTRONROR AB
STOCKHOLM (8) 22.58.15

JAPAN
THOMSON CSF
JAPAN K.K.
TOKYO (3) 264.63.46

CG 4819

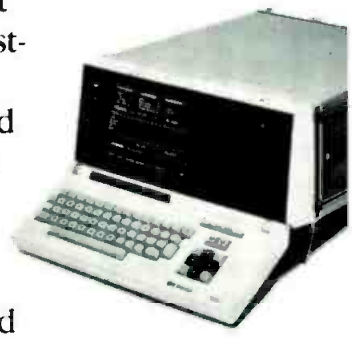
Circle 196 on Reader Service Card

www.americanradiohistory.com

Go for your first choice. We'll back you all the way.

Don't let a tight budget or a tight deadline push you into a corner. Leasametric can put the right electronic equipment in your hands overnight – at the price that fits your budget.

We inventory all the top manufacturers of telco test equipment such as transmission sets, microwave link analyzers, protocol monitors and portable microwave radios.



We'll rent it to you: Short term. Long term. You pay for usage not shelf-time. No capital investment is called for (rental charges can often be signed for without special authorization). It's fast access to specialized equipment. A golden opportunity to try out the latest and the best – or to compare models before purchasing.

We'll rent it to you with an option to buy: Everything you like about rental but with the opportunity to build equity in anticipation of eventual ownership.

We'll sell it to you: Our Metric Mart offers dramatic savings on thousands of items of nearly-new equipment. They come fully calibrated, warranted, with all accessories and manuals. Attractive financing plans are available.

The next step? Go for your telephone and call our toll-free number. Ask for the 224 page full line catalog, the latest issue of the Metric Mart Bulletin, or to talk to a Leasametric representative about renting, leasing, or buying. **800-447-4700**

Illinois call 800-322-4400. In Canada call 1-800-268-6923.

Rent the best names in the business from the best name in the business.

Leasametric

1164 Triton Drive, Foster City, CA 94404

Circle 197 on Reader Service Card

www.americanradiohistory.com

WINEGARD CO.
3000 Kirkwood St., Burlington, IA 52601
319 753-0121
PV, MATV equipment; CATV antennas; receive only earth stations.

WINEGARD CO., CATV DIV.
Box 329, Montgomeryville, PA 18936
800 523-2529
300, 400 & 450 MHz trunk & dist. equip.; 30/60 V ac power supplies; 300/400 MHz passive & subscriber multitaps & connectors; ruggedized yagi antennas; line amps; addressable converters.

WINSTED CORP. ★
9801 James Circle, Minneapolis, MN 55431
612 888-1957
Transportation cases; editing, production consoles; studio furniture, consoles, tape storage units & equipment racks.
SEE AD PG. 208

WIREWORKS CORP. ★
380 Hillside Ave., Hillside, NJ 07205
201 686-7400
Audio patch panels; audio & video cable, connectors & jackfields.

WKYT-TV ★
Box 5037, Winchester Rd., Lexington, KY 40555
606 299-0411
Studio & mobile teleproduction facilities; video post-production facility.

WOLD COMMUNICATIONS, INC. ★
10880 Wilshire Blvd., Los Angeles, CA 90024
213 474-3500
Transmit/receive, receive only & transportable satellite earth stations; microwave, satellite & telco STLs; intercity & portable ENG microwave; engineering consultant, earth station site selection & satellite time broker.

WOLF COACH, INC. ★
7 B St., Auburn, MA 01501
617 791-1950
Mobile vehicle construction.

FRANK WOOLLEY & CO., INC. ★
529 Franklin St., Reading, PA 19602
215 374-8335
Special graphics effects/animation system.

WORLD TOWER CO., INC. ★
Box 405, Mayfield, KY 42066
502 247-3642
Towers & masts.

WORLD VIDEO, INC. ★
Box 117, Boyertown, PA 19512
215 367-6055
Audio monitor & power amps & program monitors; color bar generators; NTSC & RGB monitors; blanking meters, adjusters & SCH verification modules.

WPHL PRODUCTIONS ★
5001 Wynnefield Ave., Philadelphia, PA 19131
215 878-1700
Studio & mobile teleproduction facilities; video post-production facility.

WSI CORP. ★
131 The Great Rd., Box B, Bedford, MA 01730
617 275-5300
Weather information, hardware & services; syndicated radio programming.

WXXI PRODUCTION CENTER ★
280 State St., Rochester, NY 14601
716 325-7500
Studio & mobile teleproduction facilities; video post-production facility.

XEDIT CORP. ★
133 S. Terrace Ave., Mt. Vernon, NY 10550
914 668-0388
Splicing blocks, tape; wow & flutter meters.

XIPHIAS ★
13470 Washington Blvd., Marina Del Rey, CA 90291
213 399-3283
Digital art/paint systems, bit pad digitizers, & weather symbol inserters.

★ MEANS IT'S VERIFIED

YAMAHA INT'L CORP., COMBO DIV. ★
6600 Orangethorpe, Buena Park, CA 90620
714 522-9134
Mic mixers; portable & studio consoles; graphic equalizers, analog special effects & reverb; speakers; monitor & power amps.
SEE AD PG. 67

YARDNEY ELECTRIC CORP.
82 Mechanic St., Pawcatuck, CT 02891
203 599-1100
Camera power packs; batteries for production equipment; emergency power; battery chargers.

YES PRODUCTIONS ★
916 Navarre, New Orleans, LA 70124
504 486-5511
Studio & mobile teleproduction facilities; video post-production facility.

THE ZEI-MARK CORP. ★
Box 182, Brookfield Ctr., CT 06805
203 355-0008
Lenses; 16/35 mm telecine projectors; 35 mm slide projectors; optical multiplexers.

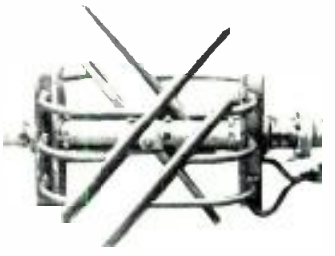
ZENITH RADIO CORP. ★
1000 Milwaukee Ave., Glenview, IL 60025
312 391-7000
STV encoders & decoders.

ZOOMAR, INC.
55 Sea Cliff Ave., Glen Cove, NY 11542
516 676-1900
Optics; electro-optical instrumentation.

ZRC CHEMICAL PRODS. CO. ★
21 Newport Ave., Quincy, MA 02171
617 328-6700
Regalvanizing antenna guy wires.

SHIVELY LABORATORIES CIRCULARLY POLARIZED OMNIDIRECTIONAL AND DIRECTIONAL FM ANTENNAS

MODEL 6010 PB PANEL
BROADBAND 88-108 MHZ



MODEL 6814 25KW PER BAY

MODEL 6810 10KW PER BAY

MODEL 6813 3KW PER BAY

PATTERN STUDIES AND OPTIMIZATIONS AVAILABLE

WRITE OR CALL FOR INFORMATION ON

ANTENNAS
TRANSMISSION LINE
FILTERS
PATCHING SYSTEM
COAXIAL SWITCHES
POWER COMBINERS

SHIVELY LABORATORIES
A DIVISION OF HOWELL LABORATORIES
85 HARRISON ROAD
BRIDGTON, MAINE 04009
(207) 647-3327
TWX 710-223-8910 SHIVELY BRGT

Circle 198 on Reader Service Card

www.americanradiohistory.com

INTRODUCING U-MATIC SPECIAL EFFECTS WITHOUT SIDE EFFECTS.

www.americanradiohistory.com

Sony, the inventor of the U-matic® format, as well as every link in the chain, has evolutionized U-matic again.

Now, for the first time ever, you can make instant broadcast-quality edits of those dramatic events which call for freeze frame, slow motion, fast forward or reverse, without transferring to 1".

And the implications of this in terms of saving time and money are enormous.

TWO NEW WORDS IN ¾" VTR'S: DYNAMIC TRACKING.®

At the heart of the new, fully integrated, plug-compatible Sony editing system is the BVU-820 videocassette recorder.

It retains all the outstanding qualities of the BVU-800 series. Including up to 40x play speed in shuttle, which is more than twice as fast as ever before—to stop, instantly, without slewing or breaking up.

But there's one brilliant addition—Dynamic Tracking. Which means U-matic users now have the ability to broadcast special effects—something which, until now, has only been associated with more expensive reel-to-reel broadcast VTR's.

TOTAL FLEXIBILITY AT YOUR FINGERTIPS.

If the BVU-820 is the heart of the system, then the BVE-800 is most assuredly the brain. Not merely because of its 128 multi-event edit memory, but because of the way it gives you total motion control of three VTR's.

The BVE-800 is expandable and upgradeable and includes full A/B sync roll capability; time code or CTL editing; built-in BVS-500 Audio/Video switcher control logic and something else only Sony can offer:

A price that's at least $5,000 less than its nearest competitor.

A CHAIN WITH NO WEAK LINKS.

The Sony U-matic editing system features another marvel of Sony technology, the BVT-800 Digital Timebase Corrector.

Without it, the BVU-820 is capable of up to 10x play speed—fully viewable.

With it, it's capable of up to 40x play speed fully viewable, and full play speed in reverse to 3x forward with broadcast quality.

For all the facts on the state of the art, from the people who invented it, call Sony Broadcast in New York/New Jersey at (201) 368-5085; in Chicago at (312) 860-7800; in Los Angeles at (213) 537-4300; in Atlanta at (404) 451-7671; or in Dallas at (214) 659-3600.

SONY
Broadcast

Sony, U-matic and Dynamic Tracking are registered trademarks of the Sony Corp. © 1982 Sony Corp. of America, 9 W. 57th St., New York, NY 10019.

www.americanradiohistory.com

There's only one reason to call Calvert first.

You'll get exactly what you want at the lowest price in America.

TRANSMITTING TUBES

3B28 ..... 7.95	4CX1500A 575.00	807 ..... 5.25	ML7007A 3387.00
3CX1000A7 ....469.00	4CX1500B 458.00	810 ..... 58.00	7527 ..... 108.00
3CX1500A7 ....421.00	4CX3000A 825.00	811A 9.75	7527A 159.00
3CX2500A3 ....415.00	4CX5000A 985.00	813 ..... 35.00	8008 ..... 15.50
3CX2500F3 ....390.00	4CX5000J 1550.00	828 ..... 70.00	8122 ..... 81.00
3CX3000A1 ....415.00	4CX10000AD ..1015.00	833A 75.00	8773 ..... 6413.00
3CX3000A7 ....534.00	4CX15000A ...1375.00	866A 6.50	8791 ..... 405.00
3CX3000F1 ....480.00	4CX20000A ...1445.00	866AX 38.00	8791V1 ..... 405.00
3CX3000F7 ....600.00	4CX35000C ...5325.00	872A 15.00	8792 ..... 765.00
3CX10000A3 ..1060.00	4CX40000G ...6720.00	889RA 1750.00	8792V1 ..... 720.00
3CX10000A7 ..1399.00	4X150A 47.50	892R 2190.00	8806 ..... 2775.00
3CX10000U7 ..2045.00	4X500A 310.00	4055 ..... 105.00	8807VI 2775.00
3CX15000A3 ..1260.00	4-65A 60.00	4055V1 ..... 105.00	8873 ..... 183.00
3CX15000A7 ..1325.00	4-125A 69.00	5671 ..... 5685.00	8874 ..... 183.00
3CX20000A7 ..1815.00	4-250A 88.00	5762 ..... 530.00	8875 ..... 183.00
3-400Z 80.00	4-400A 85.00	5867A 135.00	8890 ..... 2395.00
3-500Z 85.00	4-400AX 158.00	5879 ..... 3.95	8891 ..... 3295.00
4CX250B 52.00	4-400B 108.00	6076 ..... 795.00	8916 ..... 3090.00
4CX250BC 60.00	4-400C 85.00	6076A 697.00	8976 ..... 2980.00
4CX250K 111.00	4-500A 190.00	6146A 7.00	8977 ..... 2625.00
4CX250R 85.00	4-1000A 410.00	6146B 7.00	8984 ..... 6600.00
4CX300A 169.00	5CX1500A 618.00	6155 ..... 68.00	8985 ..... 1595.00
4CX300Y 240.00	5CX3000A 830.00	6156 ..... 68.00	8986 ..... 1220.00
4CX350A 85.00	5-500A 223.00	6166A (7007) ..2215.00	8988 ..... 2950.00
4CX350F 95.00	9C25 ..... 9998.00	6181 ..... 4050.00	8990 ..... 1473.00
4CX1000A 345.00	575A 25.00	6696A 2785.00	9007 ..... 4100.00
4CX1000K 449.00	805 ..... 49.00	6697A replace with 8773	9011 ..... 1750.00

RCA CAMERA TUBES

PART NO.	PRICE	PART NO.	PRICE	PART NO.	PRICE	PART NO.	PRICE
BC4386 series	2500.00	BC4809	710.00	BC4993R	2300.00	BC7735	250.00
BC4390 series	1850.00	BC4809B	710.00	BC4994 series	2300.00	BC8134	800.00
BC4391 series	2000.00	BC4908 series	1850.00	5820A/L	2965.00	BC8134B	800.00
BC4532U	1235.00	BC4909	1950.00	7295C	2740.00	8480	1300.00
BC4592 series	2015.00	BC4992 series	2115.00	7389C	2760.00	BC8480	1915.00
BC4593R	2200.00					BC8507	270.00
BC4594 series	2200.00					BC8541	245.00

NEW CUSTOMERS—we accept telephone orders. Inquire about our convenient Net 30 terms.
Prices and items subject to change or withdrawal without prior notice.

ANOTHER MONEY-SAVING IDEA FOR YOU!

EXCLUSIVE CALVERT OFFER

Buy factory new Eimac and RCA tubes at our fantastic discount prices and get credit for your old tube!

TYPE	CREDIT
3CX2500A3	$ 25.00
3CX2500F3	25.00
3CX3000A1	25.00
3CX3000F1	25.00
3CX3000F7	30.00
3CX15000A3	50.00
3CX15000A7	70.00
4CX5000A	45.00
4CX10000D	50.00
4CX15000A	65.00
4CX35000C	250.00
6166A/7007	70.00

If your old tube is still operable, you may return it to Calvert and we will credit you against the purchase of your factory new tube. Tubes must be carefully packed in it's original manufacturers' or equivalent carton.

Call for details prior to shipping.

TOLL FREE EAST COAST **800-526-6362**

7 DAYS—24 HOUR EMERGENCY PHONE SERVICE

TOLL FREE WEST COAST **800-421-7549**

CALVERT ELECTRONICS, INC.

ONE BRANCA ROAD, EAST RUTHERFORD, NJ 07073
800-526-6362 • 201-460-8800 • TWX 710-989-0116/ERFD • TELEX 4990274

West Coast: 1355 Redondo Avenue, Suite 6, Long Beach, CA 90804 ■ 213-498-3504/3184
England: Imperial House, Victoria Rd., Chelmsford, Essex CM1 1NY ■ Telephone: 0245 358585 ■ Telex: 995849

Circle 199 on Reader Service Card

www.americanradiohistory.com

Reps/Distributors Section

Alabama

CRESCENDO ASSOC.
Atlanta, GA
404 223-0108
Calzone Case Co. see ad pg. 14

EME II, INC.
Decatur, GA
404 325-0165
NEC America see ad pgs. 40, 143

THE PROMAR GROUP
Raleigh, NC
919 467-5466
Maxell see ad pg. 65

GRAY COMMUNICATIONS
Birmingham
205 942-2824
Mobile
205 343-0662
See ads this pg.
3M PRO A/V see ad pgs. 95, 169

POWELL ELECTRONICS, INC.
Sheffield
205 383-3330
Panasonic see ad pg. 107

PRO VIDEO SYSTEMS
Birmingham
205 942-7904
Hitachi see ad pg. 156

ALABAMA

Gray Communications Consultants, Inc.

209 Oxmoor Circle, Suite 708, Birmingham, AL 35209
(205) 942-2824

All sizes mobile production vehicles. Large selection of video hardware and accessories. Studio camera systems, earth stations, and distribution systems. Authorized dealer for Ultimatte and Newsmatte.

ALABAMA

Gray Communications Consultants, Inc.

2866 Dauphine St., Suite A, Mobile, AL 36606
(205) 476-2051

All sizes mobile production vehicles. Large selection of video hardware and accessories. Studio camera systems, earth stations, and distribution systems. Authorized dealer for Ultimatte and Newsmatte.

REYNOLDS & ASSOC., INC.
Atlanta, GA
404 393-9113
Allen Avionics see ad pg. 168

ROSCOM, INC.
Roswell (Atlanta), GA
404 992-2700
TFT, Inc. see ad pg. 198

E.J. RUTH ASSOC.
Birmingham
205 979-0880
Hipotronics see ad pg. 200

SONICS ASSOC., INC.
Birmingham
205 942-9631
Auditronics, Inc. see ad pgs. 70-71, 172

WILSON AUDIO SALES
Franklin, TN
615 794-0155
Beyer Dynamic see ad pg. 213
Cetec Vega see ad pg. 191

Alaska

MARCOM
Scotts Valley, CA
408 438-4273
TFT, Inc. see ad pg. 198

MATRIX MARKETING
Seattle, WA
206 789-5990
Cetec Vega see ad pg. 191

NORTHMAR, INC.
Seattle, WA
206 524-5170
Beyer Dynamic see ad pg. 213

McAFEE MARKETING
Seattle, WA
206 282-8663
Maxell see ad pg. 65

NU-COM ASSOC., INC.
Seattle, WA
206 364-9911
NEC America see ad pgs. 40, 143

Arizona

DEREK ALLEN ASSOCIATES
Toluca Lake, CA
213 840-8327
Beyer Dynamic see ad pg. 213

AZTEC VIDEO
Phoenix
Agfa see ad pg. 204

JOHN AXTELL & ASSOC.
Englewood, CO
303 779-1731
Maxell see ad pg. 65

DALIS ELECTRONIC SUPPLY
Phoenix
602 258-8151
Varian Eimac see ad pg. 89

ENGINEERING & RECORDING, INC.
Tempe
602 968-8675
Agfa see ad pg. 204

INNOVATIVE CONCEPTS, INTL.
Redondo Beach, CA
213 540-5684
Elector see ad pg. 37

HP MARKETING
Phoenix
602 244-2725
James B. Lansing see ad pg. 203

J.F. HURLBUT CO.
Tempe
602 968-5962
Allen Avionics see ad pg. 168

www.americanradiohistory.com

MARCOM
Scotts Valley, CA
408 438-4273
NEC America see ad pgs. 40, 143
TFT, Inc. see ad pg. 198

RIA CORP.
Cottonwood
602 634-8065
Broadcast Microwave see ad pgs. 15, 140
Emcee see ad pg. 142

ROH'S, INC.
Tucson
602 795-8573
Conrac see ad pg. 57
3M PRO A/V see ad pgs. 95, 169

SPENCER BROADCAST
Phoenix
602 242-2211
See ad pg. 146
ATI see ad pg. 224

Arkansas

CROCKETT SALES COMPANY
Dallas, TX
214 350-3377
Maxell see ad pg. 65

DIMENSION MARKETING CORP.
Dallas, TX
214 348-9657
Cetec Vega see ad pg. 191

ENGINEERING SERVICES CO.
St. Louis, MO
314 997-1515
Allen Avionics see ad pg. 168

MZB & ASSOC.
Dallas, TX
214 233-5535
See ad pg. 55
NEC America see ad pgs. 40, 143

PARCOM
Southlake, TX
817 481-7221
See ad pg. 187
TFT, Inc. see ad pg. 198

RADCOM, INC.
Eureka Springs
501 253-8702
Shively Labs see ad pg. 149

REP TECH, INC.
Terrell, TX
214 222-2131
Beyer Dynamic see ad pg. 213

California

ADTEK ASSOC.
Palo Alto
415 323-5414
Allen Avionics see ad pg. 168

DEREK ALLEN ASSOC.
Toluca Lake
213 840-8327
Beyer Dynamic see ad pg. 213

AMBER SYSTEMS
Santa Barbara
805 687-1771
Philips T&M see ad pg. 171

AUDIO INDUSTRIES CORP.
Hollywood
213 851-4111
MCI/Sony see ad pg. 83

KENNETH A. BACON ASSOC.
Novato
415 883-5041
Agfa see ad pg. 204

BOWDISH & ASSOC.
Woodland Hills
213 704-6324
Hedco see ad pg. 190

BROADCAST CARTRIDGE SERVICE
Huntington Beach
714 898-7224
Aristocart see ad pg. 12

BROADCAST ENGINEERING
San Diego
714 275-1028
ATI see ad pg. 224

BROADCAST MARKETING ASSOC.
San Jose
408 946-2236
Clear-Com see ad pg. 111

BURDEN ASSOC.
Canoga Park
213 340-4590
LPB see ad pg. 197

ECD INDUSTRIES, INC.
Los Angeles
213 820-3009
Varian Eimac see ad pg. 89

EDUCATIONAL ELECTRONICS
Inglewood
213 677-8167
Clear-Com see ad pg. 111

EVERYTHING AUDIO
Encino
213 995-4175
ATI see ad pg. 224

KEN FAY
San Francisco
415 441-4945
Los Angeles 213 622-0331
Harrison Systems see ad pg. 7

GENERAL ELECTRONIC SYSTEMS
Berkeley
415 527-7700
Conrac see ad pg. 57
3M PRO A/V see ad pgs. 95, 169

GILSON ELECTRONIC MKTG. SVCS.
Sacramento
916 969-0411
Philips T&M see ad pg. 171

HAM RADIO OUTLET
Burlingame
415 342-5757
Varian Eimac see ad pg. 89

HENRY RADIO, INC.
Los Angeles
213 477-6701
Varian Eimac see ad pg. 89

HOFFMAN VIDEO SYSTEMS
Los Angeles
213 749-3311
Hitachi see ad pg. 156
3M PRO A/V see ad pgs. 95, 169

INNOVATIVE CONCEPTS, INTL.
Redondo Beach
213 540-5684
Anton/Bauer see ad pg. 92
Elector see ad pg. 37

JUST NOTICEABLE DIFFERENCE
Fairfax
415 459-3186
James B. Lansing see ad pg. 203

J.P. ASSOC.
Torrance
213 539-8533
Emcee see ad pg. 142

LA GRANGE, INC.
N. Hollywood
213 764-4412
Tiffen see ad pg. 33

MAGNETIC COMMUNICATIONS
Tuston
714 730-5021
Maxell see ad pg. 65

MARCOM
Scotts Valley
408 438-4273
ATI see ad pg. 224
NEC America see ad pgs. 40, 143
QSI see ad pg. 164
Shively Labs see ad pg. 149
TFT, Inc. see ad pg. 198
UMC see ad pg. 98

MARKETING SPECIALISTS, INC.
Chatsworth
213 341-1471
FOR-A see ad pg. 175

CHUCK MARTIN
Canoga Park
213 999-5947
MCI/Quantel see ad pg. 63

MESA ENG. & SALES ASSOC., INC.
San Diego
714 278-8037
Philips T&M see ad pg. 171

OMEGA VIDEO, INC.
Lawndale
213 679-9021
Conrac see ad pg. 57
Grumman see ad pg. 81

PACIFIC COAST MARKETING
Los Gatos
408 395-7021
Ramko Research see ad pg. 5

PACIFIC RECORDERS & ENGINEERING
San Diego
714 453-3255
MCI/Sony see ad pg. 83

PHYLCO AUDIO ENTERPRISES
Montclair
714 621-9561
Agfa see ad pg. 204

PROFESSIONAL REPRESENTATIVES CORP.
Foster City
415 570-5055
Maxell see ad pg. 65

PROFESSIONAL SALES ENGINEERS
Westlake Village
213 991-8250
NEC America see ad pgs. 40, 143

PROJECT ONE
Hollywood
213 464-2285
Agfa see ad pg. 204

PRO REP COMPANY
Foster City
415 570-5055
FOR-A see ad pg. 175

RDX CORPORATION
Pasadena
213 231-9489
Sunnyvale
408 734-4500
Hipotronics see ad pg. 200

RPS ELECTRONICS, INC.
Buena Park
213 744-0355
Varian Eimac see ad pg. 89

BOB SCHILLER
Sherman Oaks
213 789-4211
Strand Century see ad pg. 185

SIERRA SALES
Shingle Springs
916 626-8562
Beyer Dynamic see ad pg. 213

R.E. SNADER & ASSOC.
Mill Valley
415 381-3300
Clear-Com see ad pg. 111

SOUND GENESIS
San Francisco
415 285-8900
Auditronics, Inc. see ad pgs. 70-71, 177

www.americanradiohistory.com

Studio Standards

Canon 18X Series, Canon 12X Series

Canon broadcast television lenses represent the state-of-the-art, providing an exceptional combination of advanced electronic technology, mechanical durability and optical superiority.

ABC Television has made Canon 12X and 18X Series broadcast lenses standard in practically all of their major studios and production facilities. One reason is outstanding performance: dynamic range, high sensitivity and relative aperture, and superior edge-to-edge sharpness. Another is reliability, proven day in and day out on major ABC shows and local and network news.

Tune in any time to see why Canon lenses should be standard in your operation, too. Or call or write for detailed information and full specifications on Canon studio lenses. The standards against which all others should be judged.

Canon®

Optics Division
Canon U.S.A., Inc., Head Office: One Canon Plaza, Lake Success, N.Y. 11042 (516) 488-6700
Dallas Office: 11311 Stemmens Freeway, Suite 1, Dallas, Texas 75229 (214) 620-2641 Chicago Office: 140 Industrial Drive, Elmhurst, Ill. 60126 (312) 833-3070
West Coast Office: 123 Paularino Avenue East, Costa Mesa, Ca. 92626 (714) 979-6000
Canon Canada, Inc., 3245 American Drive, Mississauga, Ontario L4V1B8, Canada

© 1981 Canon U.S.A., Inc.

Circle 200 on Reader Service Card

www.americanradiohistory.com

"I want the world. Consistent .05% corner registration and full auto-setup of up to 96 cameras on computer command."

HITACHI HEARD YOU.

AUTO SETUP

Don't want much, do you?

Dynamic registration not just at dead center but at all four corners. Plus 2-minute auto-setup of all those cameras.

You're asking for some smart camera system, networks of the world and top-drawer video production companies.

Well, Hitachi heard you, and has created an outright *genius*—the Hitachi SK-110 Camera System.

The computer registration capabilities of this camera system produce pictures of a clarity and resolution previously unheard of.

And you get auto-setup at the push of just one button, and zero reference, too, where the computer sets the green channel and compares blue and red to it with absolute precision.

The SK-110 is not only self-correcting, but self-diagnostic as well. It gives both video screen display and hard copy printout; can be hooked into the CRT for control room monitoring.

There's a high-performance contour corrector; 5 automatic setup modes including quick check; 5 data files; so many other unique features an ad can't begin to tell you about them.

The ultimate Hitachi SK-110. Contact the broadcast video division at any of the offices listed below. Hitachi Denshi America Ltd., 175 Crossways Park West, Woodbury, NY 11797 (516) 921-7200. Offices also in Chicago (312)344-4020; Los Angeles (213) 538-4880; Atlanta (404) 451-9453; Cincinnati (513) 489-6500; Dallas (214) 233-7623; Denver (303) 344-3156; Seattle, (206) 575-1690; and Washington, D.C. (301) 459-8262.

Circle 201 on Reader Service Card

www.americanradiohistory.com

STAR ENTERPRISES
Yorba Linda
714 996-5622
James B. Lansing see ad pg. 203

BRIAN TRANKLE & ASSOC.
Hillsborough
415 344-1133
Cetec Vega see ad pg. 191
UREI see ad pg. 181

TRI-TRONICS, INC.
Burbank
213 843-2170
Asaca/Shibasoku see ad pg. 82
Clear-Com see ad pg. 111
Conrac see ad pg. 57
Listec see ad pg. 182
3M PRO A/V see ad pgs. 95, 169

VAN GOTT & ASSOC., INC.
San Diego
714 272-8452
Allen Avionics see ad pg. 168

VIDEO COMMUNICATIONS CORP.
Santa Clara
408 988-2968
Walnut
714 594-2442
Datatek see ad pg. 51
Hedco see ad pg. 190

VIDEO EQUIPMENT CORP.
San Diego
714 278-4400
3M PRO A/V see ad pgs. 95, 169

VIDEO EQUIPMENT CORP. OF AMERICA
El Cajo
714 296-8661
Clear-Com see ad pg. 111

VIDEOMEDIA
Sunnyvale
408 733-6500
Hitachi see ad pg. 156
3M PRO A/V see ad pgs. 95, 169

THE VIDEO STORE
San Diego
714 560-4450
Panasonic see ad pg. 107

VOICE & VIDEO
San Diego
714 560-1166
CMX/Orrox see ad pg. 36

WESTEC/COLLINS
San Francisco
415 957-1357
Hawthorne
213 772-4479
Shallco see ad pg. 216

WESTERN BROADCAST SYSTEMS
Cupertino
408 749-0900
MCI/Quantel see ad pg. 63

WESTLAKE AUDIO
Los Angeles
213 655-0303
ATI see ad pg. 224

ZACK ELECTRONICS
San Francisco
415 626-1444
Varian Eimac see ad pg. 89

Colorado

AUDIO VISUAL SYSTEMS
Denver
303 778-9295
Agfa see ad pg. 204

JOHN AXTELL & ASSOC.
Englewood
303 779-1731
Maxell see ad pg. 65

BROADCAST COMM. PRODUCTS
Boulder
303 424-3231
ATI see ad pg. 224

CEAVCO AUDIO VISUAL
Denver
303 238-6493
3M PRO A/V see ad pgs. 95, 169

CLEVELAND ENT. OF COLORADO, INC.
Denver
303 751-3252
Philips T&M see ad pg. 171

DAVIS AUDIO/VISUAL, INC.
Denver
303 455-1122
Conrac see ad pg. 57
3M PRO A/V see ad pgs. 95, 169

DIDIER/DENVER, INC.
Evergreen
303 674-6000
See ad pgs. 157, 196
Datatek see ad pg. 51
Hedco see ad pg. 190
TFT, Inc. see ad pg. 198

DYMA ENGINEERING
Taos, NM
505 758-8686
NEC America see ad pgs. 40, 143

FAITH TAPE INDUSTRY
Lakewood
303 238-2341
Agfa see ad pg. 204

HALL ELECTRONICS
Boise, ID
208 376-1663
TFT, Inc. see ad pg. 198

HP MARKETING
Littleton
303 794-8367
James B. Lansing see ad pg. 203
UREI see ad pg. 181

J.F. HURLBUT CO.
Golden
303 279-7796
Allen Avionics see ad pg. 168

INNOVATIVE CONCEPTS, INTL.
Redondo Beach, CA
213 540-5684
Elector see ad pg. 37

JACKSON SOUND PRODUCTIONS, LTD.
Denver
303 777-9111
Agfa see ad pg. 204

MAGNETIC MEDIA CORP.
Dallas, TX
214 931-0404
See ad pg. 189

RIA CORP.
Denver
303 320-5521
Broadcast Microwave Svcs. see ad pgs. 15, 140

SATTER DISTRIBUTING CORP.
Denver
303 399-7493
800 525-0196
Tiffen see ad pg. 33

SCIENTIFIC SYSTEMS, INC.
Bailey
303 838-4615
Conrac see ad pg. 57

SOUNDS PRO SALES
Denver
303 422-6869
Beyer Dynamic see ad pg. 213

SYSTEMS MARKETING SERVICES, INC.
Evergreen
303 674-3390
FOR-A see ad pg. 175

VIDEO TEKNIX, INC.
Denver
303 922-5564
Hitachi see ad pg. 156

WESCOM MARKETING, INC.
Arvada
303 422-7619
Hipotronics see ad pg. 200

Connecticut

ABBOTT ALLISON CO., INC.
Meriden
203 237-9232
Hipotronics see ad pg. 200

JOHN B. ANTHONY CO.
Stamford
203 322-9202
Eventide see ad pgs. 34, 161
UREI see ad pg. 181

AUDIOTECHNIQUES, INC.
Stamford
203 359-2312
ATI see ad pg. 224
MCI/Sony see ad pg. 83

CRAMER
Needham Heights, MA
617 449-2100
CMX/Orrox see ad pg. 36

DAVID DEVER
Stamford
203 348-4104
MCI/Quantel see ad pg. 63

H.B. EDUCATIONAL SYST.
New Haven
203 777-5301
Hitachi see ad pg. 156
3M PRO A/V see ad pgs. 95, 169
Panasonic see ad pg. 107

HIGH-TECH SALES, INC.
Wayland, MA
617 653-3838
Allen Avionics see ad pg. 168

H.M. HOLZBERG ASSOC.
Totowa, NJ
201 256-0455
NEC America see ad pgs. 40, 143
TFT, Inc. see ad pg. 198

INTERSELL
Sauth Windsor
203 528-5357
Philips T&M see ad pg. 171

LAKE SYSTEMS
North Haven
203 239-4991
See ad pg. 187

COLORADO

DIDIER DENVER
Evergreen, CO
303/674-6000
AM · FM · TV

www.americanradiohistory.com

LANDY ASSOC., INC.
Framingham, MA
617 877-9570
See ad this pg.

MARTIN AUDIO/VIDEO CORP.
New York, NY
212 541-5900
Harrison Systems see ad pg. 7

R.G. ASSOC., INC.
Millis, MA
617 376-2044
Beyer Dynamic see ad pg. 213

ALAN SARFATY & ASSOC.
Great Neck, NY
516 466-6700
Calzone Case Co. see ad pg. 14

SPHERE ASSOC.
Reston, VA
703 471-1230
Cetec Vega see ad pg. 191

U.M.C. ELECTRONICS CO.
North Haven
203 288-7731
Aristocart see ad pg. 12

F.M. VALENTI, INC.
Lexington, MA
617 861-0089
Maxell see ad pg. 65

VIDEO PLAY INDUSTRIES
Tolland
203 872-9195
3M PRO A/V see ad pgs. 95, 169

Delaware

COMMERCIAL VIDEO REPRESENTATIVES
Reisterstown, MD
301 252-8919
Maxell see ad pg. 65

RICHARD LEWIS SALES
Glenside, PA
215 886-1555
Beyer Dynamic see ad pg. 213

PEIRCE-PHELPS, INC.
Philadelphia, PA
215 879-7000
CMX/Orrox see ad pg. 36

RABAL ASSOC., INC.
Huntingdon Valley, PA
215 947-4825
Allen Avionics see ad pg. 168

ALAN SARFATY & ASSOC.
Great Neck, NY
516 466-6770
Calzone Case Co. see ad pg. 14

VISION-SOUND PRO AUDIO, INC.
Englewood, NJ
201 871-4101
Harrison Systems see ad pg. 7

WILTRONIX, INC.
Washington Grove, MD
301 258-7676
NEC America see ad pgs. 40, 143

District of Columbia

AUDIO TECHNICAL SERVICES, LTD.
Vienna, VA
703 938-5115
Harrison Systems see ad pg. 7

COMMERCIAL VIDEO REPRESENTATIVES
Reisterstown, MD
301 252-8919
Maxell see ad pg. 65

COMEX
Washington, DC
202 338-5353
Shively Labs see ad pg. 149

LANDY ASSOCIATES, INC.
Cherry Hill, NJ
609 424-4660
See ad this pg.

RICHARD LEWIS SALES
Glenside, PA
215 886-1555
Beyer Dynamic see ad pg. 213

LION RECORDING SERVICES, INC.
Washington, DC
202 832-7885
Agfa see ad pg. 204

PEIRCE-PHELPS, INC.
Rockville, MD
301 984-7979
CMX/Orrox see ad pg. 36

ALAN SARFATY & ASSOC.
Great Neck, NY
516 466-6770
Calzone Case Co. see ad pg. 14

SOLID STATE LOGIC
Washington, DC
202 333-1500
See ad Cover 3

SPHERE ASSOC.
Reston, VA
703 471-1230
Cetec Vega see ad pg. 191

VANGUARD ENGINEERING SALES, INC.
Alexandria, VA
703 768-1660
Allen Avionics see ad pg. 168

WILTRONIX, INC.
Washington Grove, MD
301 258-7676
NEC America see ad pgs. 40, 143
TFT, Inc. see ad pg. 198

Florida

BEATTIE AND ASSOC.
Tallahasee
904 893-1382
ATI see ad pg. 224
Shively Labs see ad pg. 149
TFT, Inc. see ad pg. 198

MICHAEL CHAFEE, INTL.
Sarasota
813 366-9414
Cetec Vega see ad pg. 191

CONTROL TECHNOLOGY, INC.
Ft. Lauderdale
305 587-2716
Auditronics, Inc. see ad pgs. 70-71, 172
MCI/Sony see ad pg. 83

CRESCENDO ASSOC.
Atlanta, GA
404 223-0108
Calzone Case Co. see ad pg. 14

ELECTRONIC EQUIPMENT CO., INC.
Miami
305 871-3500
Varian Eimac see ad pg. 89

FLORIDA VIDEO SYSTEMS
Fort Lauderdale
305 771-4784
Hitachi see ad pg. 156

FLORIDA VIDEO SYSTEM
Jacksonville
904 739-1128
3M PRO A/V see ad pgs. 95, 169

FLORIDA VIDEO SYSTEMS
Miami
305 688-6618
3M PRO A/V see ad pgs. 95, 169

GLOBAL PHOTO DISTRIBUTORS INC.
Miami
305 253-2096
Tiffen see ad pg. 33

GRAY COMMUNICATIONS
Miami
305 591-3637
Tampa
813 885-1411
Gainesville
904 378-2890
See ad pgs. 158, 160
3M PRO A/V see ad pgs. 95, 169
Panasonic see ad pg. 107

INTERNATIONAL WHOLESALERS
Miami
305 940-7542
Agfa see ad pg. 204

J & J TELEVISION ELECTRONICS, INC.
Hollywood
315 989-7111
Panasonic see ad pg. 107

MANREP CORP.
Miami Lakes
305 822-7630
Beyer Dynamic see ad pg. 213

MIDWEST TELECOMMUNICATIONS
Miami
305 592-5355
Asaca/Shibasoku see ad pg. 82
Clear-Com see ad pg. 111
Conrac see ad pg. 57
3M PRO A/V see ad pgs. 95, 169
Panasonic see ad pg. 107

DISTRICT OF COLUMBIA

Landy Associates, Inc.

1890 E. Marlton Pike, Cherry Hill, NJ 08003—(609) 424-4660
801 Water Street, Framingham, MA 01701—(617) 877-9570

FEATURING: Systems Designs, Installation and Service and Supplying Ampex, Ampro, Anton-Bauer, BMS, Inc. (Microwave), Broadcast Electronics, Canon, Cine 60, Cinema Products, Conrac, Crown, Datatek, Datatron, Dynair, Electro-Voice, Fujinon, Gitzo, Ikegami, JBL, JVC, Leitch, Peter Lisand, Listec (Vinten), MCI/Quantel, O'Connor, Panasonic, Porta-Pattern, Quick-Set, Ross Video, RTS Systems, Sachtler, Sennheiser, Shure, Skotel, Tektronix, Thomson-CSF, Tweed Audio, UMC Beaucart, Videotek and other fine equipment. Call Jim Landy at 609-424-4660.

FLORIDA

Gray Communications Consultants, Inc.

1657 N.W. 79th Ave., Miami, FL 33126
(305) 591-3637

All sizes mobile production vehicles. Large selection of video hardware and accessories. Studio camera systems, earth stations, and distribution equipment. Complete systems design, sales, and service.

www.americanradiohistory.com

CONTINENTAL MICROWAVE

TV Transposers and Transmitters

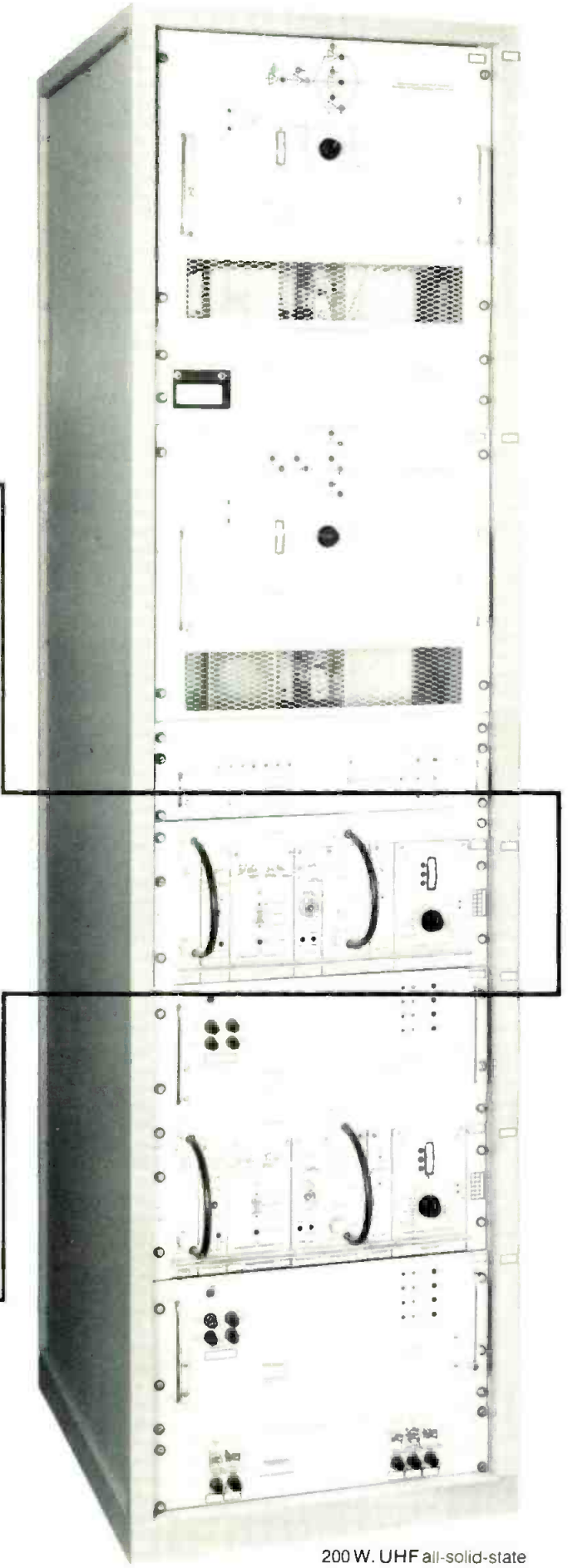
2W Single or Multichannel and all standard powers:
High Power UHF: all-solid-state 200W and single tube 1kW
Single or Double Installations with automatic changeover.

Low-power TV transmitters and translator/transposers serve towns and villages.

The TC33

A TV Transposer featuring super frequency stability and designed for reliable, unattended operation.

- **Frequency Synthesizer**
  Phase-lock loop techniques, already proven in many thousands of CML oscillators in communications equipment, enable the two transposer local oscillators to be locked to a fixed frequency reference. Carrier stability to within a few Hz allows the use of precision offset.
- **High MTBF**
  All solid-state, including PA's up to 200W UHF, with built-in redundancy.
- **Simple Maintenance**
  Plug-in broadband modules (eg, 470-860 MHz), easily portable and interchangeable.
- **VHF/UHF**
  This transposer, also poweramplifiers, available in versions for VHF/UHF and all systems.



200 W. UHF all-solid-state

Mobile Microwave Links
Fixed Microwave Links

CONTINENTAL MICROWAVE LTD

Admiral House
152 High Street North
Dunstable. Beds. LU6 1LW
England

Telephone:
Dunstable (0582) 604804
Telex 826877 CML G

Circle 202 on Reader Service Card

www.americanradiohistory.com

PHOTO TRACKMASTER INC.
Tampa
813 251-6441
Hitachi see ad pg. 156

MORT PRESS
N. Miami
305 895-2262
Hitachi see ad pg. 156
Maxell see ad pg. 65

POWERCOM ENGINEERING CORP.
Fort Lauderdale
305 463-6059
Hipotronics see ad pg. 200

PRO AUDIO GENERAL STORE, INC.
Coral Springs
305 752-0330
ATI see ad pg. 224
Auditronics see ad pgs. 70-71, 172
MCI/Sony see ad pg. 83

RECORDING STUDIO EQUIPMENT CO.
North Miami Beach
305 949-8918
MCI/Sony see ad pg. 83

REPELECT
Tampa
813 227-5051
Ramko Research see ad pg. 5

REYNOLDS & ASSOC. INC.
Cocoa Beach
305 784-4700
Allen Avionics see ad pg. 168

R & H ASSOCIATES
Safety Harbor
813 442-7505
NEC America see ad pgs. 40, 143

SINGER PRODUCTS CO., INC.
Miami
305 885-0030
ATI see ad pg. 224

SOUNDBOX INTERNATIONAL
Merritt Island
305 453-5480
Agfa see ad pg. 204

SOUTHEAST ELECTRONICS, INC.
Jacksonville
904 356-3007
Moseley Assoc. see ad pg. 131
Panasonic see ad pg. 107

SUN VIDEO COMM.
Largo
813 536-9424
3M PRO A/V see ad pgs. 95, 169

TEQSPEC
Boyntan Beach
305 734-4020
Philips T&M see ad pg. 171

TROPICAL VIDEO EXPORTERS
Miami
305 758-5800
Broadcast Microwave Svcs. see ad pgs. 15, 140

VAUGHAN ASSOCIATES
Sarasota
813 924-3734
Agfa see ad pg. 204

FLORIDA

Gray Communications Consultants, Inc.

1605 South Bumby Ave., Orlando, FL 32806
(305) 591-3637

All sizes mobile production vehicles. Large selection of video hardware and accessories. Studio camera systems, earth stations, and distribution equipment. Complete systems design, sales, and service.

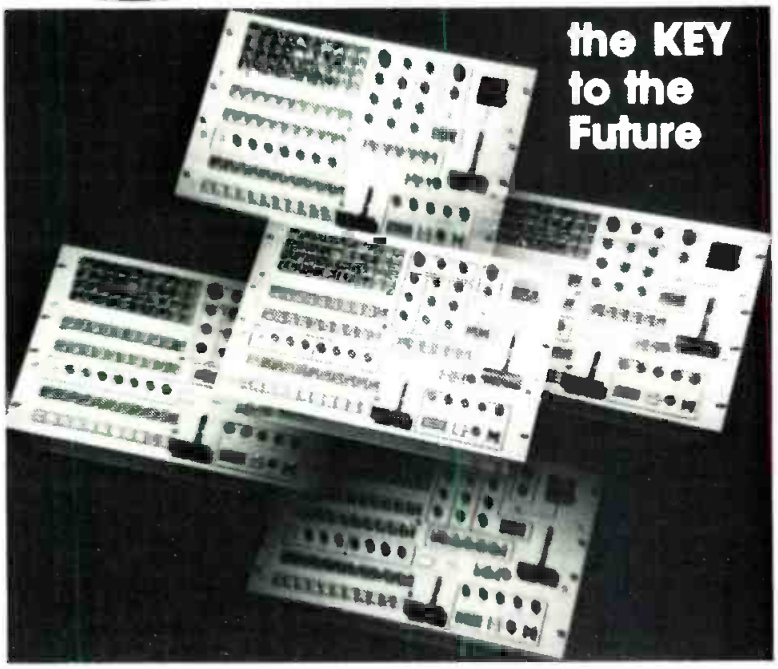
FLORIDA

Gray Communications Consultants, Inc.

5401 Southern Comfort Blvd., Tampa, FL 33614
(813) 885-1411

All sizes mobile production vehicles. Large selection of video hardware and accessories. Studio camera systems, earth stations, and distribution equipment. Complete systems design, sales, and service.

isi 200 SERIES PRODUCTION SWITCHERS



PolyKey® Effect System

200 Series Features:

The 200 Series is an advanced, state-of-the-art production switching system, offering one, two or three PolyKey® Effects (PKE) Systems. Each PKE has a 5 level processor with the following features:

- 4 input busses
- Manual or auto transitions
- Video key plus title key over/under
- Black/white/color border edging
- Chroma key standard
- Rotary and spin wipes

Every 200 Series switcher also has a Downstream Transition Unit which includes:

- "Flip-flop" mixer with cut bar
- Fade-to-black with pulse processing
- DSK with border edging and color
- Pointer Generator

isi
INDUSTRIAL SCIENCES, INC.
3521 S.W. 42nd Avenue
P.O. Box 1495
Gainesville, Florida 32602
U.S.A.

TELEPHONE
Outside U.S.A. 01 (904) 373-6782
In Florida (904) 373-6783
Sales (800) 874-7590
Service (800) 874-7874

CABLE
TWX 810-825-2307

Circle 203 on Reader Service Card

www.americanradiohistory.com

Georgia

ACK RADIO SUPPLY CO. OF GEORGIA
Atlanta
404 351-6340
Varian Eimac see ad pg. 89

ALLIED BROADCAST EQUIPMENT
Union City
404 964-1464
ATI see ad pg. 224
Auditronics see ad pgs. 70-71, 172

MARK BAUSERMAN
Stone Mountain
404 469-8468
Strand Century see ad pg. 185

MIKE CONNELL
Atlanta
404 457-1266
MCI/Quantel see ad pg. 63

CRESCENDO ASSOC.
Atlanta
404 223-0108
Calzone Case Co. see ad pg. 14

ELECTRONIC EQUIPMENT, INC.
Atlanta
404 873-5842
Conrac see ad pg. 57
Panasonic see ad pg. 107

EME II, INC.
Decatur
404 325-0165
NEC America see ad pgs. 40, 143

PAUL FLETCHER
Atlanta
404 457-1266
MCI/Quantel see ad pg. 63

GRAY COMMUNICATIONS
Albany
912 883-2121
Doraville
404 455-3121
See ad pg. 161
Listec see ad pg. 182
3M PRO A/V see ad pgs. 95, 169

THE PROMAR GROUP
Raleigh, NC
919 467-5466
Maxell see ad pg. 65

RADFORD ASSOCIATES
Atlanta
404 237-6097
Datatek see ad pg. 51
QSI see ad pg. 164

REEVES PHOTOGRAPHIC SALES INC.
Atlanta
404 351-7154
800 241-7830
Tiffen see ad pg. 33

REYNOLDS & ASSOC., INC.
Atlanta
404 393-9113
Allen Avionics see ad pg. 168

ROSCOM, INC.
Roswell
404 992-2700
TFT, Inc. see ad pg. 198

SOUND INVESTMENT
Chamblee
Agfa see ad pg. 204

TECHNICAL SYSTEMS REPS
Chamblee
404 457-0426
UREI see ad pg. 181

TECHNICAL VIDEO SYSTEM
Atlanta
404 458-1587
3M PRO A/V see ad pgs. 95, 169

TEQSPEC
Atlanta
404 455-7222
Philips T&M see ad pg. 171

TOTAL AUDIO VISUAL SERVICES, INC.
Atlanta
404 875-7555
Clear-Com see ad pg. 111

VICA ASSOCIATES
Stone Mountain
404 292-7506
FOR-A see ad pg. 175
Hedco see ad pg. 190

GEORGIA

Gray Communications Consultants, Inc.

3684 Clearview Ave., Doraville, GA 30340
(404) 455-3121

All sizes mobile production vehicles. Large selection of video hardware and accessories. Studio camera systems, earth stations, and distribution systems. Authorized dealer for Ultimatte and Newsmatte.

Eventide's BD955 Broadcast Audio Delay Finally Has Some Serious Low-Priced Competition . . .

EVENTIDE'S BD931 (MONO) PRICED AS LOW AS $1795
EVENTIDE'S BD932 (STEREO) PRICED AS LOW AS $2595

Now there's a worthy low-cost alternative to Eventide's BD955 – the world's best-selling digital obscenity delay. Eventide's new BD931/932 series is priced to be cost-effective even for stations that air only limited talk programming. Available in mono or stereo, with 3.2 or 6.4 seconds of delay, these new units feature specs that far exceed the performance of other economy delays:

FREQUENCY RESPONSE: 40Hz to 16kHz ± 1dB.
DYNAMIC RANGE: Greater than 90dB.
DISTORTION: Less than 0.2% at 1kHz & 100Hz.

So now stations on a tight budget can say goodby to the problems of trouble-prone tape loop delays without sacrificing audio quality. Eventide's BD931/BD932 series is the low-cost, high quality alternative.

OUR BD955 SERIES–NOW A GREATER VALUE THAN EVER.

For the ultimate in operating convenience, Eventide's BD955 is still in a class by itself. Only the BD955 has the patented AUTO CATCH-UP feature that automatically rebuilds the delay after objectionable material is dumped. There's no need to fill the delay period. Now increased production and lower memory chip prices have enabled us to substantially reduce prices on all BD955 models – you save up to $2400!

Eventide
the next step

265 West 54th Street
New York, N.Y. 10019
(212) 581-9290

Circle 204 on Reader Service Card

www.americanradiohistory.com

VISUAL SYSTEMS COMPANY
Atlanta
404 457-1388
Hitachi see ad pg. 156

WILSON AUDIO SALES
Franklin, TN
615 794-0155
404 993-2366 (Atlanta)
Beyer Dynamic see ad pg. 213
Cetec Vega see ad pg. 191

Hawaii

ALOHA ASSOCIATES
Honolulu
808 941-1574
Hipotronics see ad pg. 200

AUDIO VISUAL COMPANY
Honolulu
808 533-3848
Hitachi see ad pg. 156

AUDISSEY
Honolulu
808 521-6791
Clear-Com see ad pg. 111

BOKU HAWAII, INC.
Honolulu
808 947-8802
Agfa see ad pg. 204

BROADCAST SERVICES
Honolulu
808 521-6311
Moseley Assoc. see ad pg. 131

C&L SALES
Waipahu
808 671-5384
Maxell see ad pg. 65

EMC CORPORATION
Honolulu
808 836-1138
NEC America see ad pgs. 40, 143

HONOLULU ELECTRONICS
Honolulu
808 949-5564
Varian Eimac see ad pg. 89

ISLAND INSTRUMENTS
Ewa Beach
808 689-0671
James B. Lansing see ad pg. 203

REP TECH, INC.
Terrell, TX
214 222-2131
Beyer Dynamic see ad pg. 213

Idaho

COMPONENTS WEST INC.
Renton, WA
206 271-5252
Portland, OR
503 643-5588
Allen Avionics see ad pg. 168

DIDIER/DENVER
Evergreen, CO
303 674-6000
See ad pgs. 157, 196
TFT, Inc. see ad pg. 198

HALL ELECTRONICS
Boise
208 376-1663
Ramko Research see ad pg. 5
Shively Labs see ad pg. 149
TFT, Inc. see ad pg. 198

J.F. HURLBUT CO.
Golden, CO
303 279-7796
Allen Avionics see ad pg. 168

INNOVATIVE CONCEPTS, INTL.
Redondo Beach, CA
213 540-5684
Elector see ad pg. 37

MATRIX MARKETING
Seattle, WA
206 789-5990
Cetec Vega see ad pg. 191

NORTHMAR, INC.
Seattle, WA
206 524-5170
Beyer Dynamic see ad pg. 213

PROFESSIONAL REPRESENTATIVES CORPORATION
Foster City, CA
415 570-5055
Maxell see ad pg. 65

Illinois

ADVANCED VIDEO COMMUNICATIONS
Hinsdale
312 323-7464
Hitachi see ad pg. 156
Panasonic see ad pg. 107

ALLIED BROADCAST EQUIPMENT
Chicago
312 784-2257
ATI see ad pg. 224
Auditronics see ad pgs. 70-71, 172

ANCHA ELECTRONICS, INC.
Elk Grove Village
312 437-7712
See ad pg. 162

AUDICO LIMITED
Elk Grove
312 640-1030
Agfa see ad pg. 204

AUDIO RESOURCE
Westmont
312 655-1180
Eventide see ad pgs. 28, 161

AVC SYSTEMS, INC.
Chicago
312 763-6010
Harrison Systems see ad pg. 7

BRANDESS BROTHERS
Chicago
312 728-8914
800 621-5488
Tiffen see ad pg. 33

CENTER VIDEO CENTER
Chicago
312 637-1600
3M PRO A/V see ad pgs. 95, 169
Panasonic see ad pg. 107

VICTOR DUNCAN
Chicago
312 943-7300
CMX/Orrox see ad pg. 36
MCI/Quantel see ad pg. 63

H.M. DYER ELECTRONICS
Farmington Hills, MI
313 478-2157
NEC America see ad pgs. 40, 143
TFT, Inc. see ad pg. 198

ELECTRO-TECH MARKETING ASSOC.
Chicago
312 588-4535
Allen Avionics see ad pg. 168

ENTERPRISES, INC.
Hartford, WI
414 966-3303
See ad pg. 194

ARCHIE FLETCHER
Lake Bluff
312 234-5547
Strand Century see ad pg. 185

GO VIDEO SALES, INC.
Lake Forest
312 295-6726
FOR-A see ad pg. 175
Hedco see ad pg. 190

HARRIS CORPORATION
Quincy
217 222-8200
See ad pgs. 53, 139
Auditronics see ad pgs. 70-71, 172
3M PRO A/V see ad pgs. 95, 169

MAGNETIC COMMUNICATIONS
Evanston
312 869-6735
Maxell see ad pg. 65

McCURDY RADIO INDUSTRIES, INC.
Elk Grove Village
312 640-7077
Aristocart see ad pg. 12

MEADE ELECTRIC CO.
Broadview
312 344-4174
Conrac see ad pg. 57

MILAM AUDIO COMPANY
Pekin
309 346-3161
Agfa see ad pg. 204
MCI/Sony see ad pg. 83

NEW HORIZONS
Bannockburn
312 234-5911
Beyer Dynamic see ad pg. 213
Cetec Vega see ad pg. 191

PBF MARKETING
Chicago
303 973-5300
Calzone Case Co. see ad pg. 14

POLYLINE
Des Plaines
312 997-0955
Agfa see ad pg. 204

PRO AUDIO GENERAL STORE
Carroll Stream
312 690-8301
ATI see ad pg. 224
Auditronics see ad pgs. 70-71, 172

RICH, INC.
Franklin Park
312 678-3100
3M PRO A/V see ad pgs. 95, 169

RICHARDSON ELECTRONICS
Franklin Park
312 456-0600
800 323-6860
Varian Eimac see ad pg. 89

ROSCOR, INC.
Morton Grove
312 539-7700
Listec see ad pg. 182
3M PRO A/V see ad pgs. 95, 169

ILLINOIS

ANCHA ELECTRONICS, INC.

189 Gordon Street, Elk Grove Village, IL 60007
(312) 437-7712

A/V SYSTEMS AND EQUIPMENT INCLUDING: Lenco, Microtime, Sony, JVC, Shintron, Dynair, Datatek, Electrohome, Cohu, ITE, Panasonic Broadcast Video Systems, Videotek, Jerrold Ampex, Swintek, Altec, Yamaha, Biamp, EV, JBL.

www.americanradiohistory.com

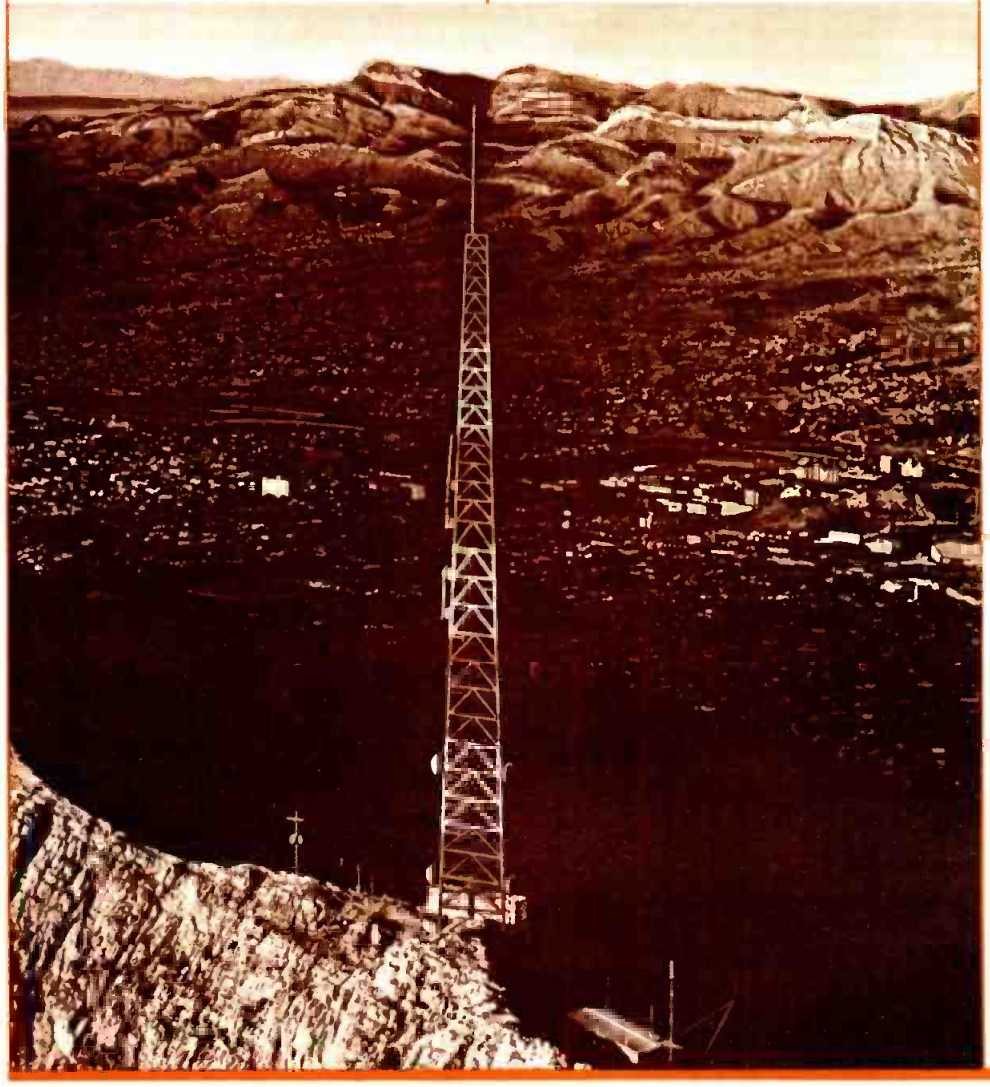
Out of 4000 stations, 1700 chose our antennas.

Phelps Dodge FM antennas were purchased for more applications from 10 watt educational to high power 25 kw class C stations.

We believe no one else even comes close to that record, and no wonder.

Performance is the overriding reason. Our antennas are less susceptible to corona. You get proper phase relationship between the vertical and horizontal components. They are available with any combination of null fill and beam tilt. And, remember, only Phelps Dodge antenna elements are fabricated of hard drawn, high conductivity copper.

Whatever your needs may be, we can probably meet them with a range of 25 different types from which to choose; low power, high power or super high power. Use an element as a single bay antenna for limited coverage or use multi-element arrays. We also have circularly and horizontally polarized stainless steel educational antennas. Directional couplers and low pass filters complete the line.



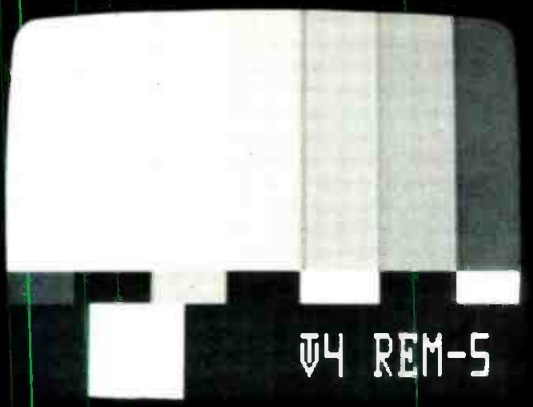
Whichever model you choose, your Phelps Dodge antenna arrives complete, ready for installation, with a tunable input transformer to match the antenna to the location. Deicer kits and radomes are optional.

Write, telephone or TWX for Catalog 779 with all the details: Phelps Dodge Communications Company, Route 79, Marlboro, NJ 07746, (201) 462-1880, TWX: 710-722-3861.

phelps dodge
Communications Company
A Division of Phelps Dodge Industries, Inc.

Circle 205 on Reader Service Card

www.americanradiohistory.com



NOW FULL TIME IDENTIFICATION

QSI announces its new series CB-9000V Live Video Identifier and Source Identified Color Bar Generators to meet the need for full time remote feed identification.

The CB-9000V Series, in the color bar mode, allows you to test your audio and video links, and the split field identification indicates who is out there. When the color bar is dropped for the live feed, the *identification is automatically transferred to the vertical interval* of the live video.

Photo by Stanley Forman, Courtesy Boston Herald American

QSI® systems, inc.

12 Linscott Road, Woburn, Massachusetts 01888 (617) 938-1403

Circle 206 on Reader Service Card

www.americanradiohistory.com

RYAN & ASSOCIATES, INC.
Hawthorne Woods
312 438-2905
Hipotronics see ad pg. 200

STEFFEY MARKETING
Northbrook
312 480-3575
James B. Lansing see ad pg. 203
UREI see ad pg. 181

SWIDERSKI ELECTRONICS
Elk Grove Village
312 364-1900
See ad pg. 215
Clear-Com see ad pg. 111
Conrac see ad pg. 57
Hitachi see ad pg. 156
3M PRO A/V see ad pgs. 95, 169

TELEVISUAL
Springfield
217 787-4855
3M PRO A/V see ad pgs. 95, 169

THROCKMORTON SALES
Ballwin, MO 63011
314 227-7222
Beyer Dynamic see ad pg. 213

TORKELSON ASSOCIATES, INC.
Deerfield
312 945-8700
Philips T&M see ad pg. 171

BRIAN TUCKER
Barrington
312 526-1660
Studer Revox America, Inc. see ad pg. 24

VIDEO MASTERS, INC.
Konsas City, MO
816 474-8530
CMX/Orrox see ad pg. 36

V-TIP INC.
Rockford
815 654-9515
Hitachi see ad pg. 156

JOHN WALSH
Elk Grove
312 569-3500
Quanta see ad pg. 195

Indiana

ALLIED BROADCAST
Richmond
317 962-8596
Aristocart see ad pg. 12
ATI see ad pg. 224
Auditronics see ad pgs. 70-71, 172
Comex see ad pg. 136
ESE see ad pgs. 134-135
Moseley Assoc. see ad pg. 131

AVC SYSTEMS, INC.
Chicago, IL
312 763-6010
Harrison Systems see ad pg. 7

A/V MARKETING
Carmel
317 846-1034
Beyer Dynamic see ad pg. 213

B & A ELECTRONIC
Terre Haute
812 232-1061
Panasonic see ad pg. 107

N. BROWNING & CO.
Dayton, OH
513 222-3946
Calzone Case Co. see ad pg. 14

COMMUNICATIONS SYSTEMS DIV. OF POWER TOOL SUPPLY
South Bend
219 489-3664
Agfa see ad pg. 204

BRUCE DAWSON & ASSOCIATES
Indianapolis
317 241-1364
NEC America see ad pgs. 40, 143

DYER ELECTRONICS
Farmington Hills, MI
313 478-2157
TFT, Inc. see ad pg. 198

ELECTRONIC TECHNICAL SERVICE
Indianapolis
317 299-8000
3M PRO A/V see ad pgs. 95, 169

ELECTRO-TECH MARKETING ASSOC.
Chicago, IL
312 588-4535
Allen Avionics see ad pg. 168

INDIANAPOLIS VIDEO
Indianapolis
317 875-5313
3M PRO A/V see ad pgs. 95, 169

KAVCO
Indianapolis
317 875-5313
CMX/Orrox see ad pg. 36
Hitachi see ad pg. 156

MAGNETIC COMMUNICATIONS
Evanston, IL
312 869-6735
Maxell see ad pg. 65

ROBERT MILSK CO.
Southfield, MI
313 354-3310
317 842-3400 (Indianapolis)
Cetec Vega see ad pg. 191

SCIENCE SALES
Ossian
219 622-4346
Hipotronics see ad pg. 200

TORKELSON ASSOC., INC.
Indianapolis
317 244-7867
Philips T&M see ad pg. 171

Iowa

ANTECH LABS, INC.
St. Louis, MO
314 962-5656
800 325-1960
Harrison Systems see ad pg. 7

EMMONS ASSOCIATES, INC.
Burnsville, MA
612 890-8920
NEC America see ad pgs. 40, 143
TFT, Inc. see ad pg. 198

ENGINEERING SERVICES CO.
St. Louis, MO
314 997-1515
Allen Avionics see ad pg. 168

ENTERPRISES, INC.
Hartford, WI
414 966-3303
See ad pg. 194

MAGNETIC COMMUNICATIONS
Evonston, IL
312 869-6735
Maxell see ad pg. 65

MARCUS-JOHNSON ASSOC.
St. Charles, MO
314 441-7066
Calzone Case Co. see ad pg. 14

PALATINE SALES, INC.
Cedar Rapids
319 365-8071
Philips T&M see ad pg. 171

R.M. ASSOCIATES, LTD.
Shawnee Mission, KS
515 274-2517 (Des Moines)
314 225-8488 (St. Louis)
Cetec Vega see ad pg. 191
James B. Lansing see ad pg. 203

THROCKMORTON SALES
Ballwin, MO
314 227-7222
Beyer Dynamic see ad pg. 213

TRIANGLE AV
Des Moines
515 278-2929
3M PRO A/V see ad pgs. 95, 169

VIDEO MIDWEST INC.
Des Moines
515 244-1447
Hitachi see ad pg. 156
3M PRO A/V see ad pgs. 95, 169

Kansas

ANTECH LABS, INC.
St. Louis, MO
314 962-5656
800 325-1960
Harrison Systems see ad pg. 7

BROADCAST TECHNICAL CONSULTANTS
Shawnee Mission
913 677-1483
Listec see ad pg. 182

BUSINESS COMMUNICATIONS
Kansas City
816 474-8000
3M PRO A/V see ad pgs. 95, 169

CENTREX AUDIO VISUAL SYSTEMS, INC.
Topeka
913 232-7701
Panasonic see ad pg. 107

DIDIER/DENVER
Evergreen, CO
303 674-6000
See ad pgs. 157, 196
TFT, Inc. see ad pg. 198

ENGINEERING SERVICES CO.
St. Louis, MO
314 997-1515
Allen Avionics see ad pg. 168

MARCUS-JOHNSON ASSOC.
St. Charles, MO
314 441-7066
Calzone Case Co. see ad pg. 14

MIDTECH ASSOCIATES, INC.
DeSoto
913 441-6565
Hipotronics see ad pg. 200

PALATINE SALES, INC.
Mission
913 831-0555
Philips T&M see ad pg. 171

R.M. ASSOCIATES, LTD.
Shawnee Mission
913 631-7606
515 274-2517 (Des Moines)
314 225-8488 (St. Louis)
Cetec Vega see ad pg. 191
James B. Lansing see ad pg. 203
UREI see ad pg. 181

THROCKMORTON SALES
Ballwin, MO
314 227-7222
Beyer Dynamics see ad pg. 213

VIDEO MASTERS, INC.
Kansas City, MO
816 474-8530
CMX/Orrox see ad pg. 36

Kentucky

ASHBY ASSOC.
Dayton, OH
513 252-5627
Allen Avionics see ad pg. 168

A/V MARKETING
Carmel, IN
317 846-1034
Beyer Dynamic see ad pg. 213

www.americanradiohistory.com

N. BROWNING & CO.
Dayton, OH
513 222-3946
Calzone Case Co. see ad pg. 14

BRUCE DAWSON & ASSOCIATES
Louisville
502 456-6666
502 456-6693
FOR-A see ad pg. 175
NEC America see ad pgs. 40, 143

RALPH L. HUCABY
Nashville, TN
615 373-0231
TFT, Inc. see ad pg. 198

KAVCO
Indianapolis, IN
317 875-5313
CMX/Orrox see ad pg. 36

MAGNETIC COMMUNICATIONS
Evanston, IL
312 869-6735
Maxell see ad pg. 65

MIDWEST TELECOMMUNICATIONS
Louisville
502 491-2888
3M PRO A/V see ad pgs. 95, 169

ROBERT MILSK CO.
Southfield, MI
313 354-3310
317 842-3400 (Indianapolis)
Cetec Vega see ad pg. 191

VIDEO TECHNIQUES, INC.
Louisville
502 491-0910
Panasonic see ad pg. 107

Louisiana

AUDIO MEDIA ASSOCIATES
New Orleans
504 586-0140
ATI see ad pg. 224
Shively Labs see ad pg. 149

BRADENCO CORP.
Dallas, TX
214 243-7261
Allen Avionics see ad pg. 168

CROCKETT SALES COMPANY
Dallas, TX
214 350-3377
Maxell see ad pg. 65

DIMENSION MARKETING CORP.
Dallas, TX
214 348-9657
713 772-0961 (Houston)
Cetec Vega see ad pg. 191

GBS-GIESLER BROADCASTING SUPPLY, INC.
Houston, TX
713 774-3314
See ad this pg.

GRAY COMMUNICATIONS CONSULTANTS, INC.
New Orleans
504 733-7265
800 252-9577
See ad this page
3M PRO A/V see ad pgs. 95, 169

INTERSTATE SCHOOL SUPPLY COMPANY
Baton Rouge
504 387-5131
3M PRO A/V see ad pgs. 95, 169

MAGNETIC MEDIA CORP.
Dallas, TX
214 931-0404
See ad pg. 189

MAR ELECTRONICS
Kenner
504 469-2602
3M PRO A/V see ad pgs. 95, 169

MZB & ASSOC.
Dallas, TX
214 233-5535
See ad pg. 55
NEC America see ad pgs. 40, 143

PARCOM
Southlake, TX
817 481-7221
See ad pg. 187
TFT, Inc. see ad pg. 198

REP TECH, INC.
Terrell, TX
214 222-2131
Beyer Dynamic see ad pg. 213

SOUTHERN RADIO SUPPLY CO., INC.
New Orleans
504 524-2343
Varian Eimac see ad pg. 89

Maine

HIGH-TECH SALES INC.
Wayland, MA
617 653-3838
Allen Avionics see ad pg. 168

H.M. HOLZBERG ASSOCIATES
Totowa, NJ
201 256-0455
NEC America see ad pgs. 40, 143
TFT, Inc. see ad pg. 198

PRS, INC.
Boston, MA
617 254-2110
800 343-3001
Harrison Systems see ad pg. 7

R.G. ASSOCIATES, INC.
Millis, MA
617 376-2044
Beyer Dynamic see ad pg. 213

ALAN SARFATY & ASSOCIATES
Great Neck, NY
516 466-6770
Calzone Case Co. see ad pg. 14

SPHERE ASSOCIATES
Reston, VA
703 471-1230
Cetec Vega see ad pg. 191

F.M. VALENTI, INC.
Lexington, MA
617 861-0089
Maxell see ad pg. 65

Maryland

ASSOCIATED SALES REPS
Baltimore
301 574-0550
UREI see ad pg. 181

AUDIO TECHNICAL SERVICES, LTD.
Vienna, VA
703 938-5115
Harrison Systems see ad pg. 7

AUDIOTECHNIQUES, INC.
Bethesda
301 469-7500
MCI/Sony see ad pg. 83

COMMERCIAL VIDEO REPRESENTATIVES
Reisterstown
301 252-8919
Maxell see ad pg. 65

CAPITOL RADIO WHOLESALERS, INC.
Rockville
301 881-2270
Varian Eimac see ad pg. 89

CASSETTE SYSTEMS, INC.
Woodstock
301 922-8865
Agfa see ad pg. 204

COMMUNICATIONS TELEVIDEO LIMITED
Silver Spring
202 585-6311
Panasonic see ad pg. 107

LOUISIANA

Gray Communications Consultants, Inc.

5441 Pepsi St., New Orleans, LA 70123
(504) 733-7265 in LA, (800) 252-9577

All sizes mobile production vehicles. Large selection of video hardware and accessories. Studio camera systems, earth stations, and distribution systems. Authorized dealer for Ultimatte and Newssmatte.

LOUISIANA

GBS GIESLER BROADCASTING SUPPLY, INC.

5914 Maple, Houston, TX 77074
(713) 774-3314

Professional advice, service, experience. Full line of RF & audio equipment. Offering transmitters through stylii. Call Bernie at (713) 774-3314.

MARYLAND

Landy Associates, Inc.

1890 E. Marlton Pike, Cherry Hill, NJ 08003—(609) 424-4660
801 Water Street, Framingham, MA 01701—(617) 877-9570

FEATURING: Systems Designs, Installation and Service and Supplying Ampex, Ampro, Anton-Bauer, BMS, Inc. (Microwave), Broadcast Electronics, Canon, Cine 60, Cinema Products, Conrac, Crown, Datatek, Datatron, Dynair, Electro-Voice, Fujinon, Gitzo, Ikegami, JBL, JVC, Leitch, Peter Lisand, Listec (Vinten), MCI/Quantel, O'Connor, Panasonic, Porta-Pattern, Quick-Set, Ross Video, RTS Systems, Sachtler, Sennheiser, Shure, Skotel, Tektronix, Thomson-CSF, Tweed Audio, UMC Beaucart, Videotek and other fine equipment. Call Jim Landy at 609-424-4660.

www.americanradiohistory.com

IMPROVE YOUR IMAGE

with

angēnieux

Angēnieux has developed for your needs, the complete modular lens systems.
With selectable attachments, we cover—from the widest wide angle to the super telephoto with the same basic lens.
These systems cover studio lenses with outstanding optical quality as well as durable, lightweight, compact ENG, EFP and field lenses.

Whatever your format, ½", ¾", 1", 1¼",
if you're thinking about purchasing a good lens
then why not consider—the very best.

angēnieux inc.

120 DERRY RD., HUDSON, N.H., 03051 • (603) 880-1710
13381 BEACH AVE., VENICE, CA 90291 • (213) 821-5080
190 DON PARK RD., MARKHAM, ONT. L3R-2V8 • (416) 495-5454

Circle 207 on Reader Service Card

www.americanradiohistory.com

EASTERN SCIENTIFIC MARKETING
Laurel
301 490-3800
Philips T&M see ad pg. 171

LANDY ASSOCIATES, INC.
Cherry Hill, NJ
609 424-4660
See ad pgs. 166, 168

RICHARD LEWIS SALES
Glenside, PA
215 886-1555
Beyer Dynamic see ad pg. 213

MARKETRATION, INC.
Phoenix
301 666-9292
James B. Lansing see ad pg. 203

MIDWEST TELECOMM
Lanham
301 577-4903
Clear-Com see ad pg. 111
Conrac see ad pg. 57
3M PRO A/V see ad pgs. 95, 169

PEIRCE-PHELPS, INC.
Bethesda
301 530-9580
CMX/Orrox see ad pg. 36
3M PRO A/V see ad pgs. 95, 169

PROFESSIONAL PRODUCTS
Bethesda
301 657-2141
Hitachi see ad pg. 156
3M PRO A/V see ad pgs. 95, 169
MCI/Quantel see ad pg. 63

RECORDING CONSULTANTS INC.
Silver Spring
301 587-1800
ATI see ad pg. 224
Clear-Com see ad pg. 111

SPHERE ASSOCIATES
Reston, VA
703 471-1230
Cetec Vega see ad pg. 191

TELEVISION ENGINEERING CORP.
Chesterfield
314 532-4700
Conrac see ad pg. 57

VANGUARD ENGINEERING SALES, INC.
Alexandria, VA
703 768-1660
Allen Avionics see ad pg. 168

VISUAL INFORMATION SYSTEMS
Owings Mills
301 363-6390
3M PRO A/V see ad pgs, 95, 169

WILTRONIX, INC.
Washington Grove
301 258-7676
ATI see ad pg. 224
Hedco see ad pg. 190
NEC America see ad pgs. 40, 143
Ramko Research see ad pg. 5

MASSACHUSETTS

Landy Associates, Inc.
1890 E. Marlton Pike, Cherry Hill, NJ 08003—(609) 424-4660
801 Water Street, Framingham, MA 01701—(617) 877-9570

FEATURING: Systems Designs, Installation and Service and Supplying Ampex, Ampro, Anton-Bauer, BMS, Inc. (Microwave), Broadcast Electronics, Canon, Cine 60, Cinema Products, Conrac, Crown, Datatek, Datatron, Dynair, Electro-Voice, Fujinon, Gitzo, Ikegami, JBL, JVC, Leitch, Peter Lisand, Listec (Vinten), MCI/Quantel, O'Connor, Panasonic, Porta-Pattern, Quick-Set, Ross Video, RTS Systems, Sachtler, Sennheiser, Shure, Skotel, Tektronix, Thomson-CSF, Tweed Audio, UMC Beaucart, Videotek and other fine equipment. Call Brad Reed at 617-877-9570.

Massachussetts

CRAMER AUDIO/VIDEO SYSTEMS
Needham
617 449-2100
ATI see ad pg. 224
CMX/Orrox see ad pg. 36
3M PRO A/V see ad pgs. 95, 169

RICHARD DEAN ASSOC., INC.
Woburn
617 933-8435
James B. Lansing see ad pg. 203

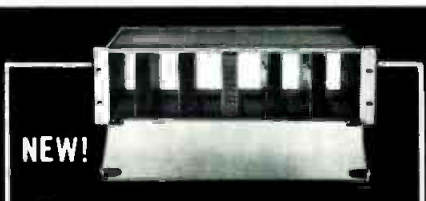
HIGH-TECH SALES INC.
Wayland
617 653-3838
Allen Avionics see ad pg. 168

Video Delay Lines

ALLEN AVIONICS Video & Pulse Delay Lines replace 75 ohm coaxial cable, provide a more suitable method of achieving precise short delays. The units reduce size, weight, installation costs, save time & effort in making delay changes.

Part No.	Delay Range (Nano-Sec.)	Delay Steps (Nano-Sec.)	Method of Variation	Maximum Insertion Loss @ 100 KHz (db)	Amplitude Flatness At Any Delay Setting 100 KHz to 5.5 MHz (db)	Max. Rise Time (Nano-Sec.)	Package Size (Inches)
VAR005	3-7	Continuous	Trimmer	.20	.2 Max.	N.A.	3⅝ x 1½ x 1¼
VAR011	0-11	Continuous	Trimmer & Toggle	.20	.25	N.A.	4⅜ x 2⅜ x 1 1/16
VP0010	0-10.5	.5	Toggle	.15	.2	3	4⅜ x 2⅜ x 1 1/16
VP0127	0-127	1.0	Toggle	.15	.3	14	4⅜ x 2⅜ x 1 1/16
VP0255	0-255	1.0	Toggle	.15	.3	16	4⅜ x 2⅜ x 1 1/16
VP0317	0-317.5	2.5	Toggle	.15	.3	20	4⅜ x 2⅜ x 1 1/16
VP0635	0-635	5.0	Toggle	*.50	.4	25	4 1/16 x 3 1/16 x 2 1/16
VP1100	0-1100	10.0	Rotary	1.25	.4	30	4 1/16 x 3 1/16 x 2 1/16
VP1270	0-1270	10.0	Toggle	*3.00	.4	30	4 1/16 x 3 1/16 2 1/16
VP2075	0-2075	25.0	Toggle	*3.00	.5	40	7⅜ x 4 1/16 x 2 3/16
VS0315	0-315	5.0	Strap	.25	.4	28	4 x 2 x 1¼
VS0635	0-635	5.0	Strap	.60	.5	33	5 x 2 x 1¼
VS1275	0-1275	5.0	Strap	1.25	.5	33	5 x 3 x 1¼
VS2075	0-2075	25.0	Strap	2.50	.5	40	6½ x 3½ x 2
RACK MOUNTABLE UNITS							
VRM0255	0-255	1.0	Slide Switch	.40	.4 Max.	20	1⅛ x 4⅛ x 4
VRM0637	0-637.5	2.5	Slide Switch	*1.00	.4	28	1⅛ x 4⅛ x 6
VRM1275	0-1275	5.0	Slide Switch	*3.00	.4	33	1⅛ x 4⅛ x 9
VRM2270	0-2270	10.0	Slide Switch	*3.00	.5	40	1⅛ x 4⅛ x 9
VRS0317	0-317.5	2.5	Strap	.40	.5	26	1⅛ x 4⅛ x 4
VRS0635	0-635	5.0	Strap	.75	.5	35	1⅛ x 4⅛ x 6
VRS1270	0-1270	10.0	Strap	1.50	.5	37	1⅛ x 4⅛ x 9
VRS2260	0-2260	20.0	Strap	3.00	.5	40	1⅛ x 4⅛ x 9

*±.2db variation at any delay setting.



NEW!

RACK MOUNTABLE VIDEO & PULSE DELAY LINES
A complete Rack Mountable series of Video & Pulse Delay Lines, with the capability of replacing up to 1450 feet of cable, is now being marketed by Allen Avionics. (See listing in table at left.)

Impedance: 75 ohms.
Pulse Distortion: Less than 4% with an input pulse rise time of 20 nanoseconds.
Working Voltage: 50 volts maximum. 100 volts maximum for Rack Mountable series.
Return Loss: 20db minimum. 15db minimum for VP2075, VS2075 and Rack Mountable series.
Delay Tolerance: 5% or 1 nanosecond, whichever is greater.

CALL/WRITE
For Video Delay Lines & Filters Catalog

ALLEN AVIONICS, INC.
224 EAST SECOND ST., MINEOLA, NY 11501
Phone: 516-248-8080

Circle 208 on Reader Service Card

www.americanradiohistory.com

When you're Taft Broadcasting, you can't afford second best.

Taft Broadcasting is an immensely successful communication company with TV stations in seven major markets. Their quality standards are tough. Their business standards are demanding. And that's why, for the past three years, Taft has been sold on 3M Routing Switchers.

We lived up to their standards by saving them time and money. We saved them installation costs by setting up quickly and easily. We saved them equipment costs by doing more with less. And we saved them manpower and modification costs by expanding the system as their needs expanded. With 3M Routing Switchers, Taft was faced with add-ons, but never with obsolescence. They know our system will be as state-of-the-art tomorrow as it is today.

Our system can be as simple as a 10x1 or as sophisticated as a computer interfaced system controlling tape and film machines, printing logs, or connecting any combination of inputs to any combination of outputs. All at the touch of a button or the pulse of a computer command.

Virtually all 3M switching equipment is microprocessor-based, so you can delegate control to individual stations, yet lock out other stations to prevent operational interference. You can route audio and video separately. And all controls are connected by one coaxial cable.

We offer five series of switchers, with your choice of control panels. And each one is designed to stay on the job for years.

For a firsthand impression of 3M Routing Switchers, check with John Owen, V.P. Television Engineering at Taft Broadcasting. So far, he's only had one complaint: "I wish we would have had them in '76, '77 and '78".

If you'd like more information about 3M Routing Switchers, call us collect at 1-612-733-8132. Or write us on your letterhead at 3M Professional Audio/Video Equipment, Bldg. 223-5E, 3M Center, St. Paul, MN 55144. For inquiries from outside the continental U.S., call or write, International Operations, 3M, Bldg. 220-5E, 3M Center, St. Paul, MN 55133. 1-612-736-2549.

3M hears you...

3M

www.americanradiohistory.com

MAGNECORD MC-II

Compare Quality at this Price

- Meets or exceeds NAB standards, with IEC equalization on request.
- DC servo, flutter-filter drive runs true regardless of line voltage fluctuation.
- Cool operation; no ventilation required.
- Full remote capability.
- Long life heads and phase locked tape guides.
- Mono or stereo play models field convertible to record.
- Automation cue tones (stop, secondary, tertiary) with LED's and external switching contacts.
- Cue track access for FSK logging.
- Universal mic/line imput.
- Immune to RFI and EMI.
- Rugged design in the Magnecord tradition —made in USA.

*Suggested Pro Net Price

Quality Products for the Audio Professional

TELEX MAGNECORD

TELEX COMMUNICATIONS, INC.

9600 Aldrich Ave So Minneapolis MN 55420 U S A
Europe Le Bonaparte Office 711 Centre Affaires Paris Nord 93153 Le Blanc Mesnil France

Circle 209 on Reader Service Card

REPS/DISTRIBUTORS

HOLZBERG ASSOCIATES
Totowa, NJ
201 256-0455
NEC America see ad pgs. 40, 143
TFT, Inc. see ad pg. 198

INDUSTRIAL COMPONENTS CORPORATION
North Wilbraham
413 596-3854
Varian Eimac see ad pg. 89

INTERSELL
Burlington
617 273-3844
Philips T&M see ad pg. 171

LAKE SYSTEMS CORP.
Newton
617 244-6881
See ad pg. 187
Hitachi see ad pg. 156
3M PRO A/V see ad pgs. 95, 169
UMC see ad pg. 98

LANDY ASSOCIATES, INC.
Framingham
617 877-9570
See ad pgs. 166, 168
Panasonic see ad pg. 107

BILL McFADDEN
Annisquam
617 283-7507
Ward Beck see ad Cover 4

PRIME MARKETING CORP.
Allston
617 787-5004
800 343-4606
Tiffen see ad pg. 33

PRS, INC. (PROFESSIONAL RECORDING & SOUND)
Boston
617 254-2110
ATI see ad pg. 224
Harrison Systems see ad pg. 7

QSI SYSTEMS, INC.
Woburn
617 938-1403
Conrac see ad pg. 57

ALAN SARFATY & ASSOCIATES
Great Neck, NY
516 466-6770
Calzone Case Co. see ad pg. 14

R.G. ASSOCIATES, INC.
Millis
617 376-2044
Beyer Dynamics see ad pg. 213

SHEA SALES
Fromingham
617 875-4199
Ramko Research see ad pg. 5

SPHERE ASSOCIATES
Reston, VA
703 471-1230
Cetec Vega see ad pg. 191

F.M. VALENTI, INC.
Lexington
617 861-0089
FOR-A see ad pg. 175
Maxell see ad pg. 65

WAGON PHOTO SALES
Chelsea
617 884-3738
Tiffen see ad pg. 33

Michigan

ASHBY ASSOC.
Dayton, OH
513 252-5627
Allen Avionics see ad pg. 168

AUDIO DISTRIBUTORS, INC.
Grand Rapids
616 452-1596
ATI see ad pg. 224
Auditronics, Inc. see ad pgs. 70-71, 172
Moseley Assoc. see ad pg. 131

AVC SYSTEMS, INC.
Chicago, IL
312 763-6010
Harrison Systems see ad pg. 7

LARRY BIEHL
Farmington Hills
313 553-2360
MCI/Quantel see ad pg. 63

CM SALES
W. Bloomfield
313 626-2397
Calzone Case Co. see ad pg. 14

CRUSE COMMUNICATIONS
E. Lansing
517 332-3579
3M PRO A/V see ad pgs. 95, 169

DARNELL SALES
Detroit
313 534-9322
Beyer Dynamic see ad pg. 213

VICTOR DUNCAN
Madison Heights
313 589-1900
MCI/Quantel see ad pg. 63

www.americanradiohistory.com

TV test equipment from the inventors of the Plumbicon® tube.

At long last a new, reliable source of TV test equipment. One that offers fast, predictable delivery. One with a name all the world trusts—Philips. Four quick examples:

PM5565 Waveform Monitor

Enjoy the luxury of examining one line and one field at a time. On top of this, there's a convenient front probe input so you can use the monitor as a troubleshooting oscilloscope.

PM5567 Vectorscope

If you want more accurate decoding and the ability to have an external reference from composite video signals, choose our vectorscope.

Both waveform monitor and vectorscope mount side by side, fit all existing hardware and use less power than the competition.

PM5539 Color Analyzer

Take it on a quick trip through your studio or control room and adjust all monitors to the same color temperature in a matter of minutes.

With four different memories, there's no problem in quickly calibrating four different phosphors.

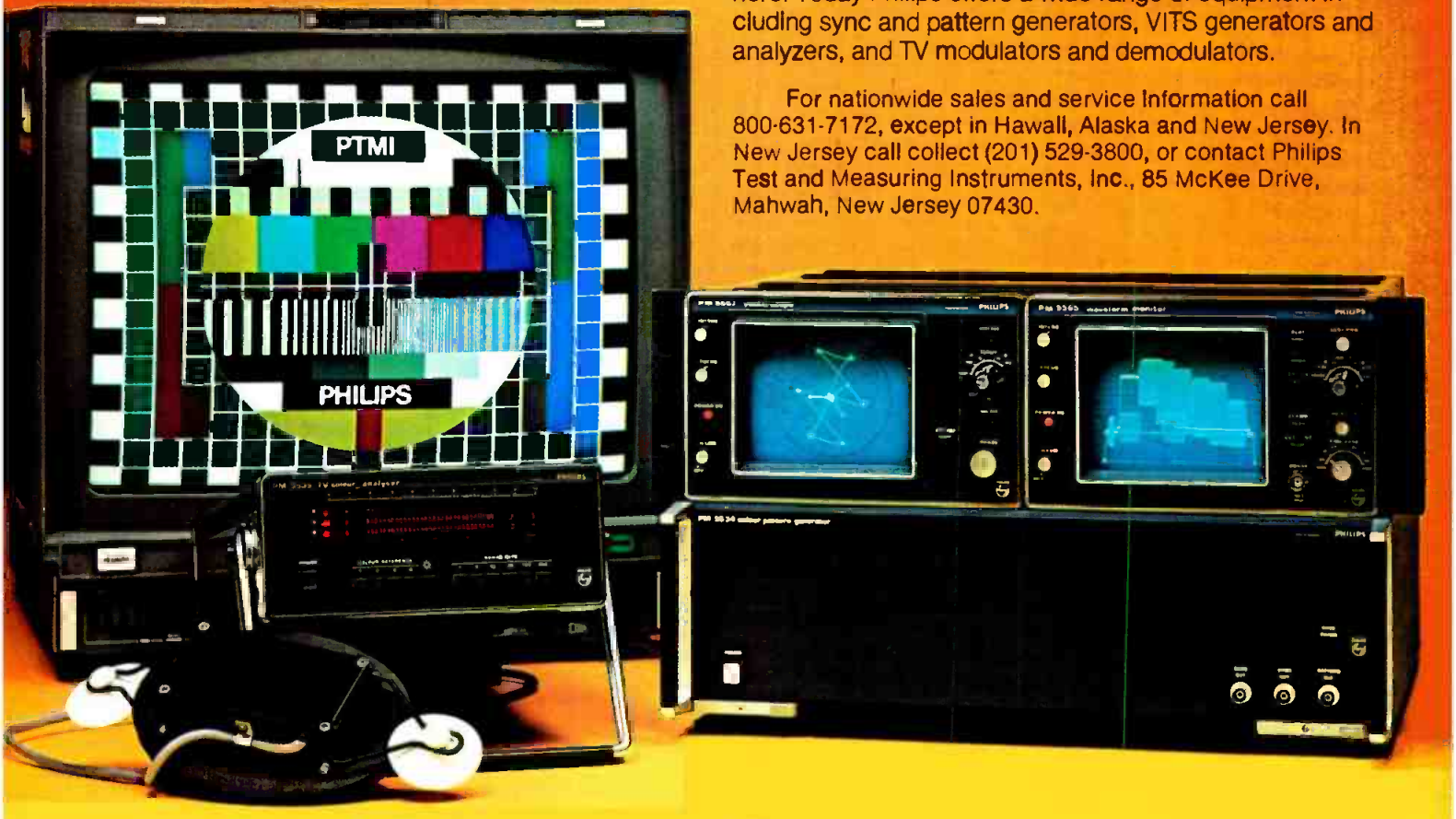
Variable full-scale, from less than set up to more than reference white, allows measurement of color tracking as a function of APL.

PM5534 Color Pattern Generator

Our universal pattern contains all the signals needed to verify overall system operation—directly from the picture. No wonder virtually every set manufacturer uses our pattern for their TV set alignment.

Of course our TV test equipment line doesn't end here. Today Philips offers a wide range of equipment including sync and pattern generators, VITS generators and analyzers, and TV modulators and demodulators.

For nationwide sales and service information call 800-631-7172, except in Hawaii, Alaska and New Jersey. In New Jersey call collect (201) 529-3800, or contact Philips Test and Measuring Instruments, Inc., 85 McKee Drive, Mahwah, New Jersey 07430.



Philips, of course.

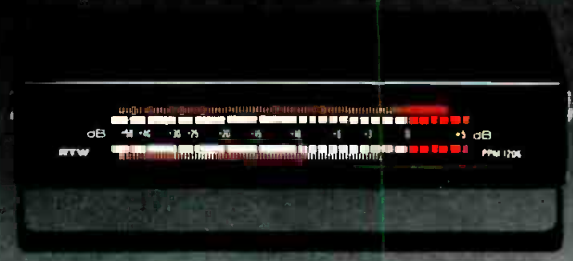
PHILIPS Test & Measuring Instruments

PHILIPS

Circle 210 on Reader Service Card

www.americanradiohistory.com

RTW Peak Meter



Stereo Peak Program Meter Model 1206

- 101 segment display permits precise peak level metering
- Automatic ON/OFF switching dependent on signal presence
- Auxiliary input for full scale metering of low level inputs

Available exclusively through

auditronics, inc.
3750 Old Getwell Rd.
Memphis, TN 38118, USA
Tel.: (901) 362-1350
Telex: 533356

Circle 211 on Reader Service Card

#1

LOW POWER TELEVISION

- UHF + VHF LPTV
- TV + FM TRANSLATORS
- AM + FM TRANSMITTERS

TELEVISION TECHNOLOGY CORP.
WILKINSON ELECTRONICS, INC.
5970 W. 60TH AVENUE
ARVADA, COLORADO 80003
(303) 423-1652 — TWX (910) 938-0396

Circle 212 on Reader Service Card

REPS/DISTRIBUTORS

DYER ELECTRONICS
Farmington Hills
313 478-2157
Clear-Com see ad pg. 111
Datatek see ad pg. 51
Hedco see ad pg. 190
NEC America see ad pgs. 40, 143
TFT, Inc. see ad pg. 198
QSI see ad pg. 164

GENERAL TELEVISION NW
Oak Park
313 548-2500
3M PRO A/V see ad pgs. 95, 169

MAGNETIC COMMUNICATIONS
Evanston, IL
312 869-6735
Maxell see ad pg. 65

ROBERT MILSK CO.
Southfield
313 354-3310
317 842-3400 (Indianapolis)
Cetec Vega see ad pg. 191

SOUND SOLUTIONS INC.
Canton
313 453-6586
ATI see ad pg. 224

THALNER ELECTRONIC LABS
Ann Arbor
313 761-4506
CMX/Orrox see ad pg. 36
Hitachi see ad pg. 156
Panasonic see ad pg. 107

V F SALES
Plymouth
313 453-8720
UREI see ad pg. 181

WKM ASSOCIATES, INC.
Madison Heights
313 588-2300
Philips T&M see ad pg. 171

AVC SYSTEMS, INC.
Minneapolis
612 729-8305
Agfa see ad pg. 204
ATI see ad pg. 224
Harrison Systems see ad pg. 7
Moseley Assoc. see ad pg 131

COLOR VIDEO SERVICE
Prior Lake
612 447-4453
Asaca/Shibasoku see ad pg. 82

CLARK R. GIBB COMPANY
Minnetonka
612 938-5434
UREI see ad pg. 181

ELECTRONIC CENTER, INC.
Minneapolis
612 371-5200
Varian Eimac see ad pg. 89

EMMONS ASSOCIATES, INC.
Burnsville
612 890-8920
Conrac see ad pg. 57
NEC America see ad pgs. 40, 143
TFT, Inc. see ad pg. 198

ENTERPRISES, INC.
Hartford, WI
414 966-3303
See ad pg. 194

CLARK R. GIBB CO.
Minnetonka
612 938-5434
Cetec Vega see ad pg. 191
James B. Lansing see ad pg. 203

GREAT TAPES
Minneapolis
612 339-1651
Agfa see ad pg. 204

KEN HAUGEN & ASSOC.
Anoka
612 421-3395
Allen Avionics see ad pg. 168

KODO ASSOCIATES
Minneapolis
612 881-1255
Maxell see ad pg. 65

NORTHLAND MEDIA
Chanhassen
612 934-6317
Calzone Case Co. see ad pg. 14

Minnesota

AINSLIE COMPANY
Edina
612 920-2996
Hipotronics see ad pg. 200

MINNESOTA

TODD
COMMUNICATIONS, INC.
6545 Cecilia Circle, Minneapolis, MN 55435
(612) 941-0556

Serving Upper Midwest—Video Systems Design, Installation & Service. Video line includes: Ikegami, Utah Scientific, Lenco, V Star 4, HVS. RF Systems Consulting, Design, Installation: TV Translators, Microwave, Cable TV, Low Power TV.

www.americanradiohistory.com

No surprises.

© 1981 Fuji Photo Film U.S.A., Inc., Magnetic Tape Div.

Available in 2", 1", ¾" and ½" Beta and VHS.

FUJI

Circle 213 on Reader Service Card

www.americanradiohistory.com

RC SALES
Maple Grove
612 425-5543
Beyer Dynamic see ad pg. 213

TODD COMMUNICATIONS
Minneapolis
612 941-0556
See ad pg. 172
Emcee see ad pg. 142
3M PRO A/V see ad pgs. 95, 169

TORKELSON ASSOCIATES, INC.
Minneapolis
612 835-2414
Philips T&M see ad pg. 171

VIDEO MIDWEST, INC.
Minneapolis
612 831-2248
Clear-Com see ad pg. 111
Hitachi see ad pg. 156
3M PRO A/V see ad pgs. 95, 169

Mississippi

CENTRAL SCHOOL SUPPLY
Jackson
601 969-6700
Hitachi see ad pg. 156
3M PRO A/V see ad pgs. 95, 169
Panasonic see ad pg. 107

CRESCENDO ASSOC.
Atlanta, GA
404 223-0108
Calzone Case Co. see ad pg. 14

EME II, INC.
Decatur, GA
404 325-0165
NEC America see ad pgs. 40, 143

GRAY COMMUNICATIONS CONSULTANTS, INC.
Mobile, AL
205 476-2051
See ad this pg.

THE PROMAR GROUP
Raleigh, NC
919 467-5466
Maxell see ad pg. 65

REP TECH, INC.
Terrell, TX
214 222-2131
Beyer Dynamic see ad pg. 213

REYNOLDS & ASSOC.
Cocoa Beach, FL
305 784-4700
Allen Avionics see ad pg. 168

ROSCOM, INC.
Roswell, GA
404 992-2700
TFT, Inc. see ad pg. 198

WILSON AUDIO SALES
Franklin, TN
615 794-0155
404 993-2366 (Atlanta)
Cetec Vega see ad pg. 191

Missouri

ANTECH LABS, INC.
St. Louis
314 962-5656
800 325-1960
Harrison Systems see ad pg. 7
Moseley Assoc. see ad pg. 131

COMMUNITRONICS, INC.
St. Louis
314 771-7160
3M PRO A/V see ad pgs. 95, 169

DELCOM CORP. ST. LOUIS
St. Louis
314 432-1164
Hitachi see ad pg. 156

ENGINEERING SERVICES CO.
St. Louis
314 997-1515
Allen Avionics see ad pg. 168

H.M. DYER ELECTRONICS
Farmington Hills, MI
313 478-2157
NEC America see ad pgs. 40, 143
TFT, Inc. see ad pg. 198

LINES MUSIC COMPANY
Springfield
417 862-5533
3M PRO A/V see ad pgs. 95, 169

MAGNETIC COMMUNICATIONS
Evanston, IL
312 869-6735
Maxell see ad pg. 65

MARCUS-JOHNSON ASSOC.
St. Charles
314 441-7066
Calzone Case Co. see ad pg. 14

MIDTEC ASSOCIATES, INC.
Florissant
314 837-5200
Hipotronics see ad pg. 200

MIDWEST MAGNETIC TAPE CORP.
Blue Springs
816 229-6933
Agfa see ad pg. 204

N.Z. VIDEO SYSTEMS
Sikeston
314 471-7145
Panasonic see ad pg. 107

PALATINE SALES, INC.
Hazelwood
314 895-4577
Philips T&M see ad pg. 171

R.M. ASSOCIATES, LTD.
Shawnee Mission, KS
913 631-7606
515 274-2517 (Des Moines)
314 225-8488 (St. Louis)
Cetec Vega see ad pg. 191
James B. Lansing see ad pg. 203

TELEVISION ENGINEERING CORP.
Chesterfield
314 532-4700
Auditronics Inc. see ad pgs. 70-71, 172
Broadcast Microwave see ad pgs. 15, 140
Clear-Com see ad pg. 111
Hedco see ad pg. 190
Listec see ad pg. 182
3M PRO A/V see ad pgs. 95, 169

THROCKMORTON SALES
Ballwin
314 227-7222
Beyer Dynamic see ad pg. 213

VIDEO MASTERS INC.
Kansas City
816 474-8530
CMX/Orrox see ad pg. 36
Hitachi see ad pg. 156
3M PRO A/V see ad pgs. 95, 169

VMI COMPANY
St. Louis
314 569-1334
Hitachi see ad pg. 156

Montana

DIDIER/DENVER
Evergreen, CO
303 674-6000
See ad pgs. 157, 196
TFT, Inc. see ad pg. 198

HALL ELECTRONICS
Boise, ID
208 376-1663
TFT, Inc. see ad pg. 198

J.F. HURLBUT CO.
Golden, CO
303 279-7796
Allen Avionics see ad pg. 168

INNOVATIVE CONCEPTS, INTL.
Redondo Beach, CA
213 540-5684
Elector see ad pg. 37

MATRIX MARKETING
Seattle, WA
206 789-5990
Cetec Vega see ad pg. 191

NORTHMAR, INC.
Seattle, WA
206 524-5170
Beyer Dynamic see ad pg. 213

PROFESSIONAL REPRESENTATIVES CORPORATION
Foster City, CA
415 570-5055
Maxell see ad pg. 65

SOUNDS PRO SALES
Denver, CO
303 422-6869
Beyer Dynamic see ad pg. 213

Nebraska

ANTECH LABS, INC.
St. Louis, MO
314 962-5656
800 325-1960
Harrison Systems see ad pg. 7

DIDIER/DENVER
Evergreen, CO
303 674-6000
See ad pg. 157, 196
TFT, Inc. see ad pg. 198

ENGINEERING SERVICES CO.
St. Louis, MO
314 997-1515
Allen Avionics see ad pg. 168

MAGNETIC COMMUNICATIONS
Evanston, IL
312 869-6735
Maxell see ad pg. 65

MARCUS-JOHNSON ASSOC.
St. Charles, MO
314 441-7066
Calzone Case Co. see ad pg. 14

R.M. ASSOCIATES, LTD.
Shawnee Mission, KS
913 631-7606
515 274-2517 (Des Moines)
314 225-8488 (St. Louis)
Cetec Vega see ad pg. 191

MISSISSIPPI

Gray Communications Consultants, Inc.

2866 Dauphine St., Suite A, Mobile, AL 36606
(205) 476-2051

All sizes mobile production vehicles. Large selection of video hardware and accessories. Studio camera systems, earth stations, and distribution equipment. Complete systems design, sales, and service.

www.americanradiohistory.com

Introducing
the Budget Balancers

If the ever-increasing costs of broadcast engineering equipment has you seeing red these days, you owe it to yourself to look into the Budget Balancers from FOR-A CORP.

You'll like what you see — no nonsense, no compromise, state-of-the-broadcasting-art engineering gear — at prices that simply defy the economic index.

Our SMPTE Time Code Generators, Time Code Readers and Title Generators are up to spec in every sense of the word. And they're incredibly reliable. In fact, the major differences between SMPTE Time Code components from FOR-A CORP. and those from the competition, are updated features and a surprisingly lower price.

The VTW-600 Professional Video Typewriter gives you features and performance unmatched by other character generators, regardless of price. And the CCS-4200 Color Corrector provides crucial color and video signal adjustments essential to professional video editing and field production.

You'll also find dozens of other innovative broadcast video products from FOR-A CORP. Each one designed to put your engineering budget back in the black.

FOR-A

Innovations in Video

FOR-A CORP. of AMERICA, 49 Lexington Street, West Newton, MA 02165 (617) 244-3223

Circle 214 on Reader Service Card

www.americanradiohistory.com

THROCKMORTON SALES
Ballwin, MO
314 227-7222
Beyer Dynamic see ad pg. 213

TODD COMMUNICATIONS
Omaha
402 551-7600
3M PRO A/V see ad pgs. 95, 169

VIDEO MASTERS, INC.
Kansas City, MO
816 474-8530
CMX/Orrox see ad pg. 36

VIDEO SERVICE OF NEBRASKA
Lincoln
402 467-3668
Panasonic see ad pg. 107

Nevada

ADTEK ASSOC.
Palo Alto, CA
415 323-5414
Allen Avionics see ad pg. 168

DEREK ALLEN ASSOCIATES
Toluca Lake, CA
213 840-8327
Beyer Dynamic see ad pg. 213

INNOVATIVE CONCEPTS, INTL.
Redondo Beach, CA
213 540-5684
Elector see ad pg. 37

MAGNETIC COMMUNICATIONS
Tustin, CA
714 730-5021
Maxell see ad pg. 65

MARCOM
Scotts Valley, CA
408 438-4273
NEC America see ad pgs. 40, 143
TFT, Inc. see ad pg. 198

BRIAN TRANKLE & ASSOC.
Hillsborough, CA
415 344-1133
Cetec Vega see ad pg. 191

VAN GOTT & ASSOC. INC.
Arcadia, CA
213 445-9728
Allen Avionics see ad pg. 168

VIDEO PRODUCTIONS OF NEVADA
Las Vegas
702 736-8034
Hitachi see ad pg. 156

LEADER

* Studio systems & accoustical design
* Installation, construction & turnkey facilities regardless of location
* Dependable technology & equipment from world class manufacturers
* Talk to us about your specific broadcast problems (Large or Small) or objectives. You'll discover so many good reasons why

WE ARE THE:

LEADER

FOR BETTER AUDIO

Leader Broadcast Systems Inc.
15707 2nd Place West
Alderwood Manor, WA. 98036

195 West 7th Avenue
Vancouver, B.C.
V5Y 1L8
(604) 685-6043
CABLE: Leadertape VCR.

Circle 215 on Reader Service Card

New Hampshire

ASSOCIATED SYSTEMS
Manchester
603 472-2297
Asaca/Shibasoku see ad pg. 82

HIGH-TECH SALES INC.
Wayland, MA
617 653-3838
Allen Avionics see ad pg. 168

HOLZBERG ASSOC.
Totowa, NJ
201 256-0455
NEC America see ad pgs. 40, 143
TFT, Inc. see ad pg. 198

PRS, INC.
Boston, MA
617 254-2110
800 343-3001
Harrison Systems see ad pg. 7

R.G. ASSOCIATES, INC.
Millis, MA
617 376-2044
Beyer Dynamic see ad pg. 213

ALAN SARFATY & ASSOC.
Great Neck, NY
516 466-6770
Calzone Case Co. see ad pg. 14

SPHERE ASSOCIATES
Reston, VA
703 471-1230
Cetec Vega see ad pg. 191

F.M. VALENTI, INC.
Lexington, MA
617 861-0089
Maxell see ad pg. 65

New Jersey

AF ASSOCIATES, INC.
Northvale
201 767-1000
See ad pg. 125
3M PRO A/V see ad pgs. 95, 169
Marconi see ad pg. 60

BROADCAST SERVICE CO.
Newton
201 579-1811
ATI see ad pg. 224

CALVERT ELECTRONICS INC.
East Rutherford
201 460-8800
800 526-6362
See ad pg. 152
Varian Eimac see ad pg. 89

CINECRAFT INTERNATIONAL
Moonachie
201 939-0875
Eastman Kodak see ad pg. 49

BOB DENTE
Parsippany
201 263-4900
Strand Century see ad pg. 185

EASTERN METRO ASSOCIATES, INC.
Bloomingdale
201 492-1747
Allen Avionics see ad pg. 168

EASTERN SCIENTIFIC MARKETING
Vincentown
609 268-1373
Philips T&M see ad pg. 171

ELECTRONICS MARKETING
Avenel
201 634-5310
Asaca/Shibasoku see ad pg. 82

H.M. HOLZBERG ASSOCIATES INC.
Totowa
201 256-0455
Hedco see ad pg. 190
NEC America see ad pgs. 40, 143
Shively Labs see ad pg. 149
TFT, Inc. see ad pg. 198

FRIEDMAN ASSOCIATES, INC.
Union
201 964-6200
Hipotronics see ad pg. 200

LANDY ASSOCIATES, INC.
Cherry Hill
609 424-4660
See ad pg. 179
Broadcast Microwave see ad pgs. 15, 140
Datatek see ad pg. 51
Listec see ad pg. 182
MCI/Quantel see ad pg. 63

RICHARD LEWIS SALES
Glenside, PA
215 886-1555
Beyer Dynamic see ad pg. 213

MID ATLANTIC REPRESENTATIVE
Mentor, Ohio
216 974-8270
Maxell see ad pg. 65

JOSEPH NIGRO ASSOCIATES INC.
Wayne
201 790-1415
Grumman see ad pg. 81

OPTIMEDIA SYSTEMS, INC.
Clifton
201 777-7600
Panasonic see ad pg. 107

PEIRCE-PHELPS, INC.
Philadelphia, PA
215 879-7000
CMX/Orrox see ad pg. 36

www.americanradiohistory.com

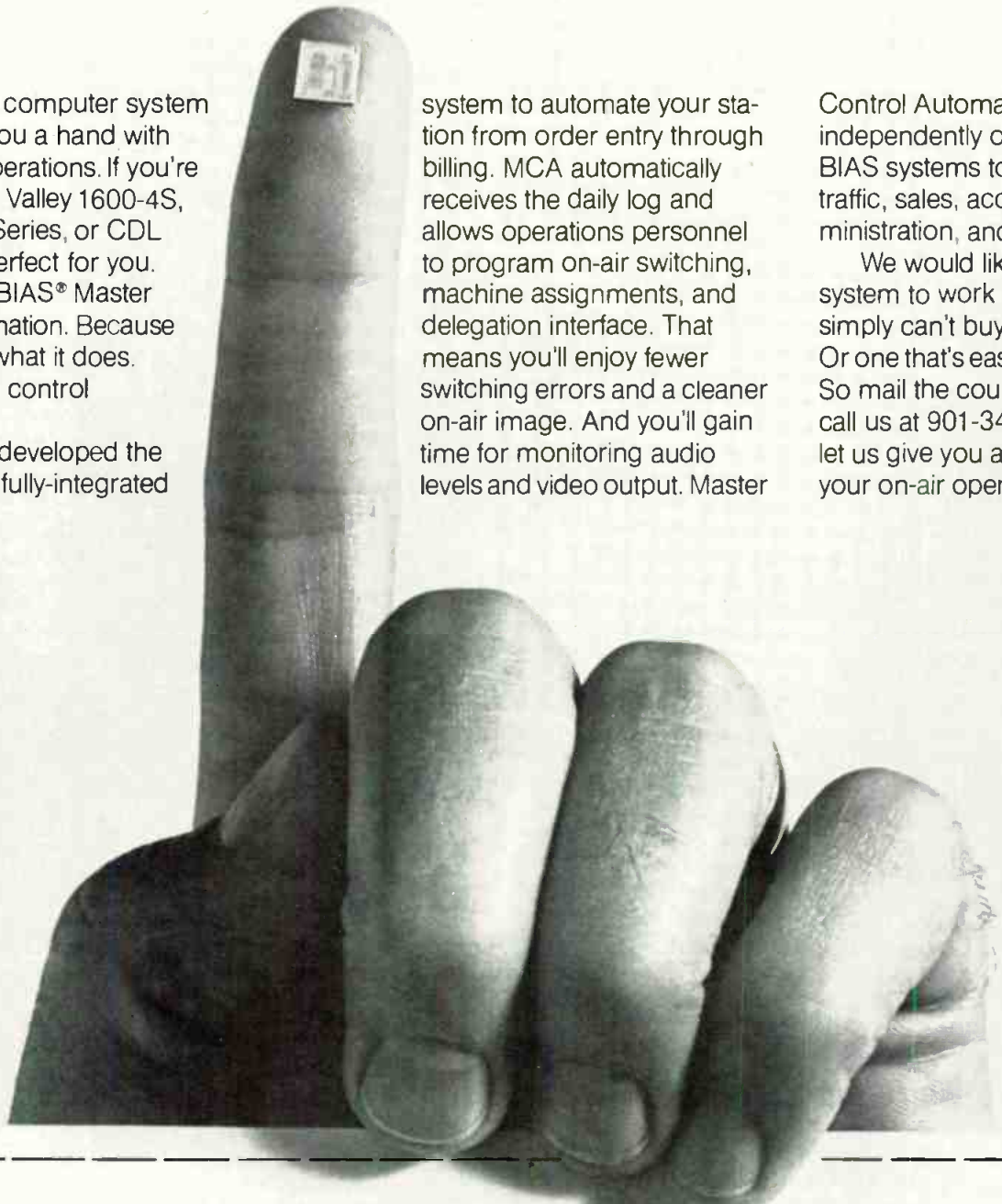
IF YOU'RE THE CHIEF ENGINEER, HERE'S GOOD NEWS.

Now there's a computer system that will give you a hand with your on-air operations. If you're using a Grass Valley 1600-4S, Vital VIX 115 Series, or CDL MC-990 it's perfect for you.

It's called BIAS® Master Control Automation. Because that's exactly what it does. Makes master control automatic.

BIAS has developed the industry's first fully-integrated system to automate your station from order entry through billing. MCA automatically receives the daily log and allows operations personnel to program on-air switching, machine assignments, and delegation interface. That means you'll enjoy fewer switching errors and a cleaner on-air image. And you'll gain time for monitoring audio levels and video output. Master Control Automation can work independently or with other BIAS systems to coordinate traffic, sales, accounting, administration, and much more.

We would like to put this system to work for you. You simply can't buy a better one. Or one that's easier to operate. So mail the coupon today. Or call us at 901-345-3544. And let us give you a hand with your on-air operations.



TELL ME HOW TO GET A BETTER ON-AIR IMAGE.

NAME _____ PHONE _____

TITLE _____ ADDRESS _____

STATION/COMPANY _____ CITY _____ STATE _____ ZIP _____

BIAS®

BROADCAST DIVISION OF DATA COMMUNICATIONS CORPORATION
3000 Directors Row • Memphis, TN 38131-0403

Circle 216 on Reader Service Card

www.americanradiohistory.com

PROFESSIONAL AUDIO MARKETING
Melville, NY
516 367-8620
Beyer Dynamic see ad pg. 213

RABAL ASSOCIATES, INC.
Huntingdon Valley, PA
215 947-4825
Allen Avionics see ad pg. 168

ALAN SARFATY & ASSOC.
Great Neck, NY
516 466-6770
Calzone Case Co. see ad pg. 14

SHEA SALES
Maplewood
201 762-2382
Ramko Research see ad pg. 5

SPHERE ASSOCIATES
Reston, VA
703 471-1230
Cetec Vega see ad pg. 191

SYMCO, INC.
Millington
201 647-6262
FOR-A see ad pg. 175

TELE-MEASUREMENTS
Clifton
201 473-8822
Conrac see ad pg. 57

Hitachi see ad pg. 156
3M PRO A/V see ad pgs. 95, 169

VISION-SOUND PROFESSIONAL AUDIO, INC.
Englewood
201 871-4101
Harrison Systems see ad pg. 7
Studer Revox see ad pg. 24

New Mexico

JOHN AXTELL & ASSOCIATES
Englewood, CO
303 779-1731
Maxell see ad pg. 65

BROADCAST SYSTEMS CORPORATION
Albuquerque
505 884-8235
Emcee see ad pg. 142

DIDIER/DENVER
Evergreen, CO
303 674-6000
See ad pgs. 157, 196
TFT, Inc. see ad pg. 198

DYMA ENGINEERING
Taos
505 758-2686
NEC America see ad pgs. 40, 143
Shively Labs see ad pg. 149

J.F. HURLBUT CO.
Golden, CO
303 279-7796
Allen Avionics see ad pg. 168

INNOVATIVE CONCEPTS, INTL.
Redondo Beach, CA
213 540-5684
Elector see ad pg. 37

SOUNDS PRO SALES
Denver, CO
303 422-6869
Beyer Dynamic see ad pg. 213

New York

AETNA OPTIX INC.
Island Park
516 889-8570
Tiffen see ad pg. 33

ALPHA ELECTRONICS
Brooklyn
212 633-2800
Varian Eimac see ad pg. 89

ANDOL AUDIO PRODUCTS, INC.
Brooklyn
212 435-7322
Agfa see ad pg. 204

ANGEL SOUND CO.
New York
212 757-1952
Agfa see ad pg. 204

ASHTON COMMUNICATIONS SYSTEMS, INC.
Vestal
607 748-3331
Hitachi see ad pg. 156
3M PRO A/V see ad pgs. 95, 169

AUDIO VIDEO CORPORATION
Menands
518 449-7213
Hitachi see ad pg. 156
3M PRO A/V see ad pgs. 95, 169
Panasonic see ad pg. 107

DAVID BAIN ASSOCIATES
Port Washington
516 883-4818
ESE see ad pgs. 134-135
Moseley Assoc. see ad pg. 131

BROADCAST MARKETING CORPORATION
New York
212 593-0974
3M PRO A/V see ad pgs. 95, 169

CAMERA CRAFTSMAN CORP.
New York
212 227-9726
Tiffen see ad pg. 33

VIDEO DELAY LINES
FOR TV BROADCASTING APPLICATIONS

Television Equipment
U.S. Distributor of

Matthey Video and Pulse Delays
Matthey Video Filters
Elcon Tape Cleaners and Evaluators for 2″, 1″ and ¾″ Tape
Racal Headsets for Intercom/Sportscaster Applications
BCA Intercom/Interphone Systems
Link Video DA-s

For further information, please contact:

Television Equipment Associates, Inc.
Box 393, SOUTH SALEM, N.Y. 105900393
914-763-8893, in Calif. 213-271-9570
TWX 710-575-2600

NEW from Matthey
VU360 VIDEO DELAYS

Maximise use of 19″ Rack space – up to 13 VU 360's side by side

- TV BROADCAST PERFORMANCE
- 75Ω
- ADJUSTS DELAY FROM 10 to 325ns (more than 360° phase)

MORE STABLE THAN CABLE

ASK FOR DATA TODAY

Circle 217 on Reader Service Card

www.americanradiohistory.com

THE CAMERA MART, INC.
New York
212 757-6977
See ad pgs. 104-105
Clear-Com see ad pg. 111
Frezzolini see ad pg. 111
Listec see ad pg. 182
3M PRO A/V see ad pgs. 95, 169
MCI/Quantel see ad pg. 63
Panasonic see ad pg. 107

CECO COMMUNICATIONS, INC.
Brooklyn
212 646-6300
800 221-0860
Varian Eimac see ad pg. 89

PETE DECEW AGENCY
Cazenovia
315 655-8602
Hipotronics see ad pg. 200

DODD ELECTRONICS SUPPLY
Ossining
914 762-4200
Varian Eimac see ad pg. 101

EASTERN METRO ASSOCIATES, INC.
Plainview
516 931-1414
Allen Avionics see ad pg. 168

GOTHAM EXPORT CORP.
New York
212 741-7411
UREI see ad pg. 181

H.M. HOLZBERG ASSOC.
Totowa, NJ
201 256-0455
NEC America see ad pgs. 40, 143
TFT, Inc. see ad pg. 198

IDEAL WORLD MARKETING INC.
New York
212 673-5440
Tiffen see ad pg. 33

KOPPE RADEN CORP.
White Plains
914 682-8038
Hitachi see ad pg. 156

LANDY ASSOCIATES, INC.
Cherry Hill, NJ
609 424-4660
See ad this page

LAUMIC COMPANY
New York City
212 889-3300
Agfa see ad pg. 204
CMX/Orrox see ad pg. 36

MAGNO SOUND
New York
212 757-8855
3M PRO A/V see ad pgs. 95, 169

MARKETRATION, INC.
Levittown
516 731-5997
James B. Lansing see ad pg. 203

MARTIN AUDIO VIDEO CORP.
New York
212 541-5900
ATI see ad pg. 224
Harrison Systems see ad pg. 7

L. MATTHEW MILLER ASSOCIATES LTD.
New York
212 741-8011
Panasonic see ad pg. 107

MID ATLANTIC REPRESENTATIVE
Mentor, OH
216 974-8270
Maxell see ad pg. 65

MPCS
New York
212 586-3690
Clear-Com see ad pg. 111

NACO ELECTRONICS CORP.
N. Syracuse
315 699-2651
Philips T & M see ad pg. 171

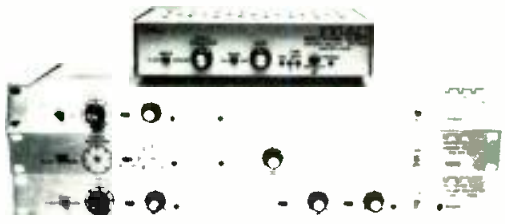
NORTHEAST BROADCAST LABS
S. Glen Falls
518 793-2181
ATI see ad pg. 224
ESE see ad pgs. 134-135
Moseley Assoc. see ad pg. 131

NEW YORK

Landy Associates, Inc.

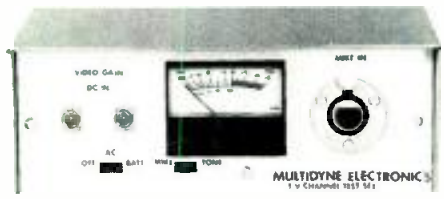
1890 E. Marlton Pike, Cherry Hill, NJ 08003—(609) 424-4660
801 Water Street, Framingham, MA 01701—(617) 877-9570

FEATURING: Systems Designs, Installation and Service and Supplying Ampex, Ampro, Anton-Bauer, BMS, Inc. (Microwave), Broadcast Electronics, Canon, Cine 60, Cinema Products, Conrac, Crown, Datatek, Datatron, Dynair, Electro-Voice, Fujinon, Gitzo, Ikegami, JBL, JVC, Leitch, Peter Lisand, Listec (Vinten), MCI/Quantel, O'Connor, Panasonic, Porta-Pattern, Quick-Set, Ross Video, RTS Systems, Sachtler, Sennheiser, Shure, Skotel, Tektronix, Thomson-CSF, Tweed Audio, UMC Beaucart, Videotek and other fine equipment. Call Jim Landy at 609-424-4660.



VPDA-2
Very low distortion (.1 diff. phase), clamped, 6 output video distribution amplifier. Portable AC/DC, single and dual rack-mounted, sync adding.

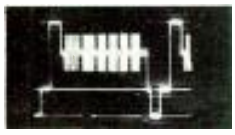
High reliability graphics-character generator. Two character sizes, aural feedback, musical effects capability, RS232C computer interface for unlimited uses and storage, very low distortion keyer. Soon available for color operation. It costs only $795.



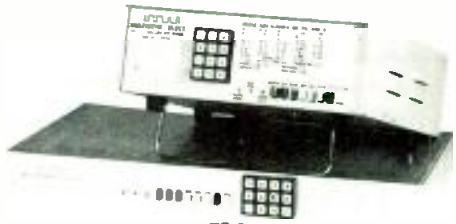
TS-1
Bars, tone, black, AC/DC microphone preamp still under $1000. Thousands in use.

Before

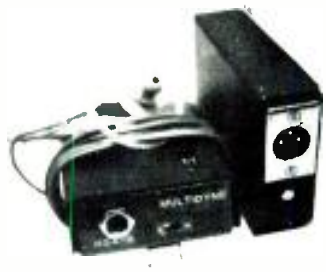
Typical 8281 equalization results for 2300".



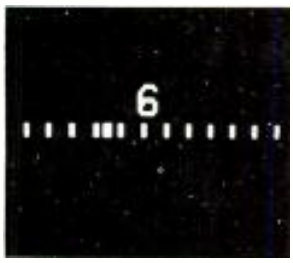
After

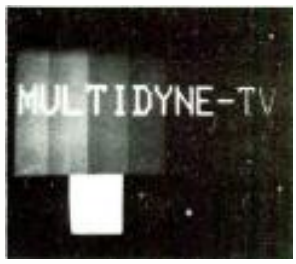


TS-3
The only computerized bar-black-countdown generator, hundreds in use.



Low distortion earphone amplifier, low power, lightweight, two gain ranges, low battery flashing indicator. It can amplify telephone audio through magnetic pick-up. It costs only $110.





Count-down with swinging dot and beeps, color bars with 12 character ID, black, oven referenced pulses, optional SMPTE bars and external character generator. Prices start at $1600.

ADA-7
A premium audio DA with .05% distortion, 6 outputs, +24 DBM maximum output, input and output transformers, regulated supply, all XLR input and output connectors. (No more barrier trips!) Available: portable and single or dual rackmounted.

MULTIDYNE ELECTRONICS
P.O. Box 528, Locust Valley, NY 11560 (516) 671-7278

Circle 218 on Reader Service Card

www.americanradiohistory.com

PASTON-HUNTER COMPANY
Syracuse
315 437-2992
James B. Lansing see ad pg. 203

PROFESSIONAL AUDIO MARKETING
Melville
516 367-8620
Beyer Dynamic see ad pg. 213

ALAN SARFATY & ASSOC.
Great Neck
516 466-6770
Calzone Case Co. see ad pg. 14

SINGER PRODUCTS CO., INC.
Westbury
516 333-2000
ATI see ad pg. 224

SONOCRAFT CORP.
New York
212 760-9300
Conrac see ad pg. 57
Gray Engineering Labs see ad pg. 200
Hitachi see ad pg. 156
3M PRO A/V see ad pgs. 95, 169

SOUND SYSTEMS, INC.
Long Island City
212 786-4474
3M PRO A/V see ad pgs. 95, 169

SPHERE ASSOCIATES
Reston, VA
703 471-1230
Cetec Vega see ad pg. 191

STUDIO FILM & TAPE
New York
212 977-9330
Agfa see ad pg. 204

SYMCO, INC.
Glendale
212 417-0537
FOR-A see ad pg. 175

TECHNISPHERE CORP.
New York
212 889-9170
Agfa see ad pg. 204
Hitachi see ad pg. 156

TELEPROMPTER
New York
212 581-7787
Hitachi see ad pg. 156

UPSTATE MARKETING
Glenville
518 399-6311
UREI see ad pg. 181

VIDEO PROJECTS
New Hyde Park
516 352-6001
Hitachi see ad pg. 156

VISION-SOUND PROFESSIONAL AUDIO, INC.
Englewood, NJ
201 871-4101
Harrison Systems see ad pg. 7

J.G. WELCH ASSOC. INC.
Rochester
716 244-1100
Allen Avionics see ad pg. 168

WESTEC AUDIO VIDEO
New York
212 586-1662
Auditronics, Inc. see ad pgs. 70-71, 172

WINDSOR TOTAL VIDEO SYSTEMS
New York
212 725-8080
Hitachi see ad pg. 156

North Carolina

AUDIO TECHNICAL SERVICES, LTD.
Vienna, VA
703 938-5115
Harrison Systems see ad pg. 7

BROADCAST SERVICES CO.
Four Oaks
919 934-6869
Auditronics, Inc. see ad pgs. 70-71, 172

CRESCENDO ASSOC.
Atlanta, GA
404 223-0108
Calzone Case Co. see ad pg. 14

DOUG COOK & ASSOC.
Charlotte
704 542-6510
Ramko Research see ad pg. 5

EME
High Point
919 869-3335
NEC America see ad pgs. 40, 143
TFT see ad pg. 198

KIRKMAN ELECTRONICS
Winston Salem
919 722-9131
3M PRO A/V see ad pgs. 95, 169

MICHAEL VIDEO SALES, INC.
Clemmons
919 766-8288
MCI/Quantel see ad pg. 63

THE PROMAR GROUP
Raleigh
919 467-5466
Maxell see ad pg. 65

REYNOLDS & ASSOCIATES, INC.
Cocoa Beach, FL
305 784-4700
Allen Avionics see ad pg. 168

SOUTHERN COASTAL MARKETING SERVICES
Charlotte
704 542-6543
Aristocart see ad pg. 12
Moseley Assoc. see ad pg. 131
QSI see ad pg. 164
Ramko Research see ad pg. 5

SOUTHEASTERN SIGHT AND SOUND
Raleigh
919 828-2311
Clear-Com see ad pg. 111
3M PRO A/V see ad pgs. 95, 169

STUDIOWORKS
Charlotte
704 375-1053
MCI/Sony see ad pg. 83

TECHNICAL VIDEO SYSTEMS
Winston-Salem
919 748-0916
Listec see ad pg. 182
Panasonic see ad pg. 107

TEQSPEC
Winston-Salem
919 723-8102
Philips T&M see ad pg. 171

WILSON AUDIO SALES
Franklin, TN
615 794-0155
Beyer Dynamic see ad pg. 213
Cetec Vega see ad pg. 191

North Dakota

AUDIO VISUAL INC.
Bismark
701 258-6360
Hitachi see ad pg. 156

AVC SYSTEMS, INC.
Minneapolis, MN
612 729-8305
Harrison Systems see ad pg. 7

EMMONS ASSOC. INC.
Burnsville, MN
612 890-8920
NEC America see ad pgs. 40, 143
TFT, Inc. see ad pg. 198

ENTERPRISES, INC.
Hartford, WI
414 966-3303
See ad pg. 194

KODO ASSOC.
Minneapolis, MN
612 881-1255
Maxell see ad pg. 65

CLARK R. GIBB CO.
Minnetonka, MN
612 938-5434
Cetec Vega see ad pg. 191

NORTHLAND MEDIA
Chanhassen, MN
612 934-6317
Calzone Case Co. see ad pg. 14

KEN HAUGEN & ASSOC.
Anoka, MN
612 421-3395
Allen Avionics see ad pg. 168

RC SALES
Maple Grove, MN
612 425-5543
Beyer Dynamic see ad pg. 213

Ohio

ASHBY ASSOC.
Dayton
513 252-5627
Allen Avionics see ad pg. 168

AVC SYSTEMS, INC.
Chicago, IL
312 763-6010
Harrison Systems see ad pg. 7

N. BROWNING & CO.
Dayton
513 222-3946
Calzone Case Co. see ad pg. 14

BRUCE DAWSON & ASSOC.
Louisville, KY
502 456-6693
NEC America see ad pgs. 40, 143

H.M. DYER ELECTRONICS
Farmington Hills, MI
313 478-2157
NEC America see ad pgs. 40, 143
TFT, Inc. see ad pg. 198

BOB HAWKINS, INC.
Columbus
614 461-6997
FOR-A see ad pg. 175

INDUSTRIAL VIDEO INC.
Lorain
216 277-1218
Panasonic see ad pg. 107

KAVCO
Columbus
513 898-2003
CMX/Orrox see ad pg. 36
Conrac see ad pg. 57
Hitachi see ad pg. 156
3M PRO A/V see ad pgs. 95, 169
Moseley Assoc. see ad pg. 131

THE LITTLE WAREHOUSE, INC.
Brooklyn Hts.
216 398-0022
Agfa see ad pg. 204

MAGNETIC COMMUNICATIONS
Evanston, IL
312 869-6735
Maxell see ad pg. 65

MARKETING ANALYSTS, INC.
Worthington
614 436-2808
Beyer Dynamic see ad pg. 213

www.americanradiohistory.com

ualizer can work wonders. For the
rson who owns a UREI equalizer,
racles are
ten made.
In the studio,
sound rein-
rcement sys-
ns, in broadcast radio and
levision production, a good
gineer relies upon his talent and
pertise. And, the UREI reputation
r unparalleled professional
rformance and quality.

The UREI Equalizers

Whether to correct or create, UREI
fers a complete line of the most
lective audio frequency shaping
struments available:

**he Model 535 Dual Graphic
qualizer**

vo channels of ten calibrated, step
ss, vertical adjustment controls
th ±12dB boost or attenuation. Also
ailable in a single channel
rsion-Model 533.

**he Model 537 One-Third Octave
raphic Equalizer**

single channel device, it provides
12dB of boost or cut in 27 ISO
3 octave increments from 40Hz
16kHz.

**he Model 539 Room Equalization
lter Set**

ecifically designed for room
qualization, it offers 27 ISO 1/3
tave calibrated adjustments from 0
–15 dB attenuation plus band-end
nable high and low-pass filters.

**he Model 546 Dual Parametric
qualizer**

vo independent channels. Each has
ur sections of continuously variable
ndwidth, frequency, boost or cut;
pass for each filter section and
annel; tunable end-cut filters; and
dB gain. Also available in a single
annel version-Model 545.

From One Pro To Another-trust all
ur toughest signal processing
eeds to UREI.

From One Pro To Another

nited Recording Electronics Industries
60 San Fernando Road, Sun Valley, California 91352 (213) 767-1000 Telex: 65-1389 UREI SNVY
orldwide: Gotham Export Corporation, New York; Canada: E.S. Gould Marketing, Montreal

See your professional audio products dealer for full technical information.

Circle 219 on Reader Service Card

www.americanradiohistory.com

MIDWEST CORP.
Cincinnati
513 651-1904
See ad pg. 53
ATI see ad pg. 224
Clear-Com see ad pg. 111
Conrac see ad pg. 57
Listec see ad pg. 182
3M PRO A/V see ad pgs. 95, 169
Moseley see ad pg. 131
Panasonic see ad pg. 107

J.B. PARENT CO.
Columbus
614 459-5947
Cetec Vega see ad pg. 191
UREI see ad pg. 181

PHOTOCO INC.
Cleveland
216 581-0880
Tiffen see ad pg. 33

PI CORPORATION
Cleveland
216 238-0644
Agfa see ad pg. 204

JIMMY REA ELECTRONICS
Columbus
614 221-5884
3M PRO A/V see ad pgs. 95, 169
Panasonic see ad pg. 107

ROYAL AUDIO VISUAL
Cincinnati
513 841-1267
Agfa see ad pg. 204

RPC ELECTRONICS
Cleveland
216 461-2280
3M PRO A/V see ad pgs. 95, 169

THALNER ELECTRONIC LABS
Ann Arbor, MI
313 761-4506
CMX/Orrox see ad pg. 36

UNITED RADIO INC.
Cincinnati
513 761-4030
Shallco see ad pg. 216

BOB WHITE ASSOC.
Solon
216 248-1317
James B. Lansing see ad pg. 203

WKM ASSOC., INC.
Cleveland
216 524-5930
Philips T & M see ad pg. 171

Oklahoma

AUDIO ASSOC.
Oklahoma City
405 524-3232
Agfa see ad pg. 204

BRADENCO CORP.
Dallas, TX
214 243-7261
Allen Avionics see ad pg. 168

CROCKETT SALES COMPANY
Dallas, TX
214 350-3377
Maxell see ad pg. 65

DELCOM CORP.
Tulsa
918 494-9500
Hitachi see ad pg. 156
3M PRO A/V see ad pgs. 95, 169

DOUG BROWN ENTERPRISES, INC.
Tulsa
918 747-3618
ATI see ad pg. 224
Auditronics see ad pgs. 70-71, 172

DIMENSION MARKETING CORP.
Dallas, TX
214 348-9657
713 772-0961 (Houston)
Cetec Vega see ad pg. 191

VICTOR DUNCAN, INC.
Dallas, TX
214 369-1165
Panasonic see ad pg. 107

ELECTRONIC SYSTEMS, INC.
Oklahoma City
405 946-9900
Panasonic see ad pg. 107

FORD AUDIO & ACOUSTICS INC.
Oklahoma City
405 947-9966
Hitachi see ad pg. 156

MZB & ASSOCIATES
Dallas, TX
214 233-5535
See ad pg. 55
NEC America see ad pgs. 40, 143

PARCOM
Southlake, TX
817 481-7221
See ad pg. 187
TFT, Inc. see ad pg. 198

REP TECH, INC.
Terrell, TX
214 222-2131
Beyer Dynamic see ad pg. 213

Oregon

COMPONENTS WEST INC.
Portland
503 643-5588
Allen Avionics see ad pg. 168

Circle 220 on Reader Service Card

www.americanradiohistory.com

CUSTOM VIDEO SYSTEMS
Portland
503 295-6963
3M PRO A/V see ad pgs. 95, 169

INNOVATIVE CONCEPTS, INTL.
Redondo Beach, CA
213 540-5684
Elector see ad pg. 37

MARCOM
Scotts Valley, CA
408 438-4273
TFT, Inc. see ad pg. 198

MATRIX MARKETING
Seattle, WA
206 789-5990
Cetec Vega see ad pg. 191

NORTHMAR, INC.
Seattle, WA
206 524-5170
Beyer Dynamic see ad pg. 213

NU-COM ASSOC. INC.
Seattle, WA
206 364-9911
NEC America see ad pgs. 40, 143

PROFESSIONAL REPRESENTATIVES CORP.
Foster City, CA
415 570-5055
Maxell see ad pg. 65

TASCO, INC.
Portland
503 245-8168
Philips T & M see ad pg. 171

VIDEOSONICS
Portland
503 232-4632
Clear-Com see ad pg. 111
CMX/Orrox see ad pg. 36
3M PRO A/V see ad pgs. 95, 169

Pennsylvania

ASHBY ASSOC.
Dayton, OH
513 252-5627
Allen Avionics see ad pg. 168

AUDIO ASSOC. INC.
Bethlehem
215 865-6013
ATI see ad pg. 224

AUDIO INNOVATORS, INC.
Pittsburgh
412 471-6220
ATI see ad pg. 224

BAY SYSTEMS
Lancaster
717 569-5726
Shively Labs see ad pg. 149

EASTERN SCIENTIFIC MARKETING
Chalfont
215 822-6503
Philips T & M see ad pg. 171

ELECTROMEDIA, INC.
Pittsburgh
412 683-5424
Panasonic see ad pg. 107

FORGE MANOR RECORDING
Phoenixville
215 644-3266
Agfa see ad pg. 204

BILL HAMILTON
Folsom
215 543-4677
James B. Lansing see ad pg. 203

HOLZBERG ASSOCIATES
Totowo, NJ
201 256-0455
TFT, Inc. see ad pg. 198

LANDY ASSOCIATES, INC.
Cherry Hill, NJ
609 424-4660
See ad pg. 184

LERRO ELECTRICAL CORP.
Philadelphia
215 223-8200
Conrac see ad pg. 57
Hitachi see ad pg. 156
Listec see ad pg. 182
3M PRO A/V see ad pgs. 95, 169

RICHARD LEWIS SALES
Glenside
215 886-1555
Beyer Dynamic see ad pg. 213

J.P. LILLEY & SON, INC.
Harrisburg
717 238-8123
Panasonic see ad pg. 107

MARKETING ANALYSTS, INC.
Worthington, OH
614 436-2808
Beyer Dynamic see ad pg. 213

MID ATLANTIC REPRESENTATIVE
Mentor, OH
216 974-8270
Maxell see ad pg. 65

J.B. PARENT CO.
Columbus, OH
614 459-5947
Cetec Vega see ad pg. 191

PEIRCE-PHELPS, INC.
Philadelphia
215 879-7171
CMX/Orrox see ad pg. 36
Conrac see ad pg. 57
3M PRO A/V see ad pgs. 95, 169

Weather and News without the BLUES

No blue tint or edging—all hair detail intact!*

These same results are possible in **your** newscasts and other live broadcast situations. Operating on a new principle, detail from the foreground camera comes through perfectly in the composite—including each strand of hair, smoke, liquid, shadows, transparent objects—the works! No blue tint, blue edging or edge crawl—no "cut-out" look; no soft edges on hard objects—no hard edges on soft objects.

NEWSMATTE needs no encoder and is simple to operate with its one knob control. It will integrate into your switcher or can stand alone. **NEWSMATTE** marks a breakthrough for live broadcast just as the Emmy award winning **ULTIMATTE-4** was a breakthrough for commercials and TV production. Call or write **now** for more information or a demonstration.

See ULTIMATTE'S NEWSMATTE!

ULTIMATTE CORPORATION 18607 Topham St., Reseda, California 91335 USA • (213) 345-5525

*Actual photo from BARCO CTVM MONITOR

Circle 221 on Reader Service Card

www.americanradiohistory.com

PHILADELPHIA ELECTRONICS
Philadelphia
215 568-7400
Shallco see ad pg. 216

RABAL ASSOC.
Huntingdon Valley
215 947-4825
Allen Avionics see ad pg. 168

RPC ELECTRONICS
Pittsburgh
412 782-3770
Conrac see ad pg. 57
3M PRO A/V see ad pgs. 95, 169

ALAN SARFATY & ASSOC.
Great Neck, NY
516 466-6770
Calzone Case Co. see ad pg. 14

SOUND SYSTEMS, INC.
Flourtown
215 242-3500
3M PRO A/V see ad pgs. 95, 169

SPHERE ASSOC.
Reston, VA
703 471-1230
Cetec Vega see ad pg. 191

VAL-TRONICS
Pittston
717 655-5937
Moseley Assoc. see ad pg. 131

VISION-SOUND PROFESSIONAL AUDIO, INC.
Englewood, NJ
201 871-4101
Harrison Systems see ad pg. 7

VISUAL SOUND COMPANY
Broomall
215 544-8700
Panasonic see ad pg. 107

WILTRONIX, INC.
Washington Grove, MD
301 258-7676
TFT, Inc. see ad pg. 198

WKM ASSOCIATES, INC.
Pittsburgh
412 892-2953
Philips T & M see ad pg. 171

Rhode Island

CRAMER
Needham Heights, MA
617 449-2100
CMX/Orrox see ad pg. 36

HIGH-TECH SALES INC.
Wayland, MA
617 653-3838
Allen Avionics see ad pg. 168

HOLZBERG ASSOC.
Totowa, NJ
201 256-0455
NEC America see ad pgs. 40, 143
TFT, Inc. see ad pg. 198

MARTIN AUDIO VIDEO CORP.
New York, NY
212 541-5900
Harrison Systems see ad pg. 7

R.G. ASSOCIATES, INC.
Millis, MA
617 376-2044
Beyer Dynamic see ad pg. 213

ALAN SARFATY & ASSOC.
Great Neck, NY
516 466-6770
Calzone Case Co. see ad pg. 14

SPHERE ASSOC.
Reston, VA
703 471-1230
Cetec Vega see ad pg. 191

South Carolina

AUDIO TECHNICAL SERVICES, LTD.
Vienna, VA
703 938-5115
Harrison Systems see ad pg. 7

CRESCENDO ASSOC.
Atlanta, GA
404 223-0108
Calzone Case Co. see ad pg. 14

EME I, INC.
High Point, NC
919 869-3335
NEC America see ad pgs. 40, 143
TFT, Inc. see ad pg. 198

THE PROMAR GROUP
Raleigh, NC
919 467-5466
Maxell see ad pg. 65

REYNOLDS & ASSOCIATES, INC.
Cocoa Beach, FL
305 784-4700
Allen Avionics see ad pg. 168

WILSON AUDIO SALES
Franklin, TN
615 794-0155
Beyer Dynamic see ad pg. 213

South Dakota

AVC SYSTEMS, INC.
Minneapolis, MN
612 729-8305
Harrison Systems see ad pg. 7

EMMONS ASSOC. INC.
Burnsville, MN
612 890-8920
NEC America see ad pgs. 40, 143
TFT, Inc. see ad pg. 198

CLARK R. GIBB CO.
Minnetonka, MN
612 938-5434
Cetec Vega see ad pg. 191

KEN HAUGEN & ASSOC.
Anoka, MN
612 421-3395
Allen Avionics see ad pg. 168

KODO ASSOC.
Minneapolis, MN
612 881-1255
Maxell see ad pg. 65

NORTHLAND MEDIA
Chanhassen, MN
612 934-6317
Calzone Case Co. see ad pg. 14

RC SALES
Maple Grove, MN
612 425-5543
Beyer Dynamic see ad pg. 213

Tennessee

BROADCAST EQUIPMENT AND SUPPLY
Bristol
615 878-2531
Bluff City
615 878-2531
800 251-0487
See ad this page
ATI see ad pg. 224
Shallco see ad pg. 216

CENTEL SYSTEMS, INC.
Memphis
901 346-1043
Hitachi see ad pg. 156
3M PRO A/V see ad pgs. 95, 169

CONSOLIDATED MEDIA SYSTEMS, INC.
Nashville
615 244-3933
Panasonic see ad pg. 107

CRESCENDO ASSOC.
Atlanta, GA
404 223-0108
Calzone Case Co. see ad pg. 14

PENNSYLVANIA

Landy Associates, Inc.

1890 E. Marlton Pike, Cherry Hill, NJ 08003—(609) 424-4660
801 Water Street, Framingham, MA 01701—(617) 877-9570

FEATURING: Systems Designs, Installation and Service and Supplying Ampex, Ampro, Anton-Bauer, BMS, Inc. (Microwave), Broadcast Electronics, Canon, Cine 60, Cinema Products, Conrac, Crown, Datatek, Datatron, Dynair, Electro-Voice, Fujinon, Gitzo, Ikegami, JBL, JVC, Leitch, Peter Lisand, Listec (Vinten), MCI/Quantel, O'Connor, Panasonic, Porta-Pattern, Quick-Set, Ross Video, RTS Systems, Sachtler, Sennheiser, Shure, Skotel, Tektronix, Thomson-CSF, Tweed Audio, UMC Beaucart, Videotek and other fine equipment. Call Jim Landy at 609-424-4660.

TENNESSEE

Gray Communications Consultants, Inc.

115 Spence Lane, Nashville, TN 37210
(615) 883-9175

All sizes mobile production vehicles. Large selection of video hardware and accessories. Studio camera systems, earth stations, and distribution equipment. Complete systems design, sales, and service.

TENNESSEE

BROADCAST EQUIPMENT & SUPPLY CO., INC.

Rt. 1—Weaver Pike, Bluff City, TN 37618
800-251-0487, 800-352-7026 (TN)

The complete source of professional audio equipment and supplies for the broadcaster. Prompt shipment from stock. Order toll-free anywhere in the U.S., Puerto Rico and the Virgin Islands.

www.americanradiohistory.com

"I ♥ Mantrix™ 2S"

"My Mantrix 2S makes me look good and the production look great every time. With up to 56 overlapping subs and immediate access to my lighting looks, I'm ready and able to meet any 'surprises' that call for fast changes in the lighting."

Mantrix™ 2S
STRAND CENTURY

A Subsidiary of Rank Industries America Inc.

Excellence in Lighting Since 1929

Strand Century, Inc. 18111 South Santa Fe Avenue. P.O. Box 9004. Rancho Dominguez. California 90224 Tel.: (213) 637-7500. Telex: 664741
Strand Century, Inc. 20 Bushes Lane. Elmwood Park. New Jersey 07407 Tel.: (201) 791-7000. Telex: 130322
Strand Century Company Ltd. 6520 Northam Drive. Mississauga. Ontario. Canada L4V1H9 Tel.: (416) 677-7130. Telex: 06968646

www.americanradiohistory.com

EME II, INC.
Decatur, GA
404 325-0165
NEC America see ad pgs. 40, 143

GRAY COMMUNICATIONS CONSULTANTS, INC.
Nashville
615 883-9175
See ad pg. 184
3M PRO A/V see ad pgs. 95, 169

GRAY COMMUNICATIONS CONSULTANTS, INC.
Knoxville
615 523-3107
See ad this pg.

RALPH L. HUCABY
Nashville
615 373-0231
TFT, Inc. see ad pg. 198

ERIC JOHNSON
Nashville
615 834-1184
Harrison Systems see ad pg. 7

PHASE AUDIO, INC.
Memphis
901 726-1900
Auditronics, Inc. see ad pgs. 70-71, 172

TENNESSEE

Gray Communications Consultants, Inc.

901 East Vine Ave., Knoxville, TN 37915
(615) 523-3107

All sizes mobile production vehicles. Large selection of video hardware and accessories. Studio camera systems, earth stations, and distribution equipment. Complete systems design, sales, and service.

RADFORD ASSOC.
Nashville
615 373-0231
Datatek see ad pg. 51

REYNOLDS & ASSOCIATES, INC.
Cocoa Beach, FL
305 784-4700
Allen Avionics see ad pg. 168

TEQSPEC II
Morristown
615 587-0980
Philips T & M see ad pg. 171

WILSON AUDIO SALES
Franklin
615 794-0155
Beyer Dynamic see ad pg. 213
Cetec Vega see ad pg. 191

Texas

ACCENT AUDIO-VIDEO
Dallas
214 458-0501
Panasonic see ad pg. 107

ALLIED BROADCAST EQUIPMENT
Plano
214 423-8667
ATI see ad pg. 224
Auditronics see ad pgs. 70-71, 172

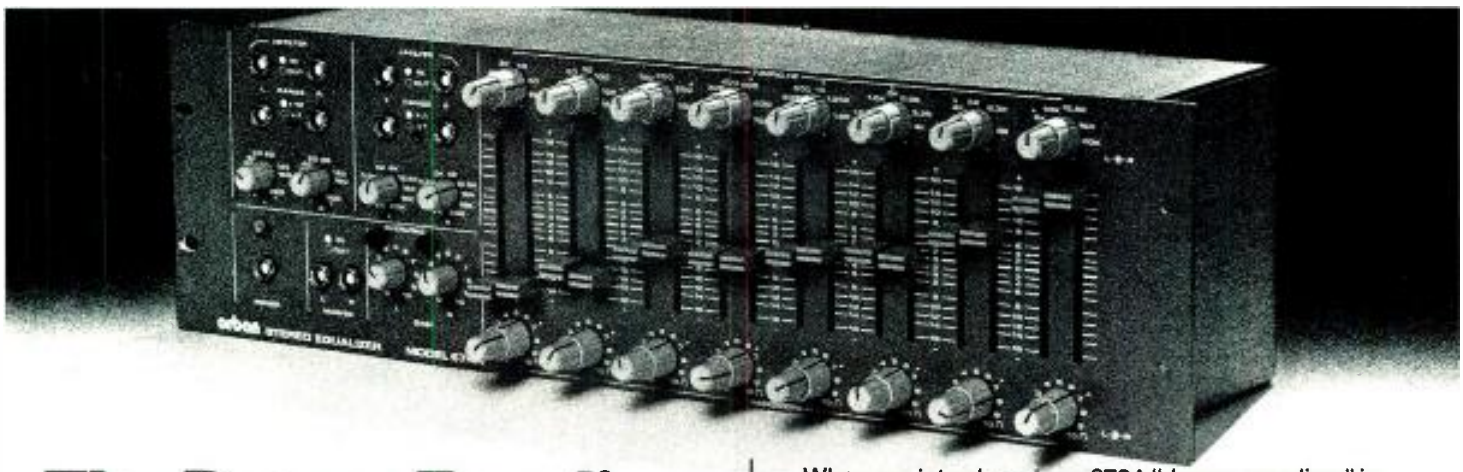
ALPHATECH, INC.
Allen
214 423-4570
Philips T & M see ad pg. 171

DUSTY ARNOLD
Richardson
214 644-7607
Hipotronics see ad pg. 200

BRADENCO CORP.
Dallas
214 243-7261
Allen Avionics see ad pg. 168

BROADCAST SYSTEMS, INC.
Austin
512 836-6014
Conrac see ad pg. 57
3M PRO A/V see ad pgs. 95, 169
Moseley Assoc. see ad pg. 131

NEIL CONLEY
Bedford
817 654-5445
James B. Lansing see ad pg. 203



The Dream Equalizer:
Now mono or stereo.

When we introduced our 672A "dream equalizer" in 1979, we had an instant hit. Audio professionals loved its versatility and clean sound. Eight parametric EQ bands (with reciprocal curves) were combined with wide-range tunable 12 dB/octave highpass and lowpass filters. The result: an amazingly powerful and useful machine. A cost-saving one too, because the outputs of both filters are available to perform a full electronic crossover function.

The 672A now has a stereo twin — the new 674A, with all the power of two 672A's in a space-saving 5¼" rackmount package. Naturally, both equalizers are built to full Orban professional standards. That means industrial-quality construction and components, RFI suppression, a heavy-duty roadworthy chassis, and comprehensive backup support.

orban
Orban Associates Inc.
645 Bryant St. San Francisco, CA 94107
Telex: 17-1480, Cable: ORBANAUDIO

Circle 222 on Reader Service Card

www.americanradiohistory.com

CONTINENTAL ELECTRONICS MFG. CO.
Dallas
214 381-7161
See ad pg. 144
Auditronics, Inc. see ad pgs. 70-71, 172

CROCKETT SALES COMPANY
Dallas
214 350-3377
Maxell see ad pg. 65

CROUSE-KIMZEY CO.
Ft. Worth
817 739-9911
800 433-2105
ATI see ad pg. 224

DIMENSION MARKETING CORP.
Dallas
214 348-9657
713 772-0961 (Houston)
Cetec Vega see ad pg. 191

DOBBS STANFORD OF TEXAS
Dallas
214 358-0800
James B. Lansing see ad pg. 203
UREI see ad pg. 181

VICTOR DUNCAN, INC.
Dallas
214 369-1165
CMX/Orrox see ad pg. 36
Listec see ad pg. 182
MCI/Quantel see ad pg. 63

DYMA ENGINEERING
Taos, NM
505 758-8686
NEC America see ad pgs. 40, 143

GIESLER BROADCAST SUPPLY
Houston
713 774-3314
See ad this pg.
Moseley Assoc. see ad pg. 131

G.P. ENTERPRISES
Arlington
817 745-3373
Asaca/Shibasoku see ad pg. 82

HOWELL ELECTRONICS, INC.
El Paso
915 566-3968
Agfa see ad pg. 204

J.F. HURLBUT CO.
Golden, CO
303 279-7796
Allen Avionics see ad pg. 168

INDUSTRIAL AUDIO/VIDEO
Houston
713 524-1956
CMX/Orrox see ad pg. 36
Conrac see ad pg. 57
3M PRO A/V see ad pgs. 95, 169
Panasonic see ad pg. 107

L.D. SYSTEMS, INC.
Houston
713 695-9400
Agfa see ad pg. 204

TEXAS

GIESLER BROADCASTING SUPPLY, INC.

5914 Maple, Houston, TX 77074
(713) 774-3314

Professional advice, service, experience. Full line of RF & audio equipment. Offering transmitters through stylii. Call Bernie at (713) 774-3314.

TEXAS

PARCOM

2460 Raintree Drive, Southlake, TX 76092
(817) 481-7221

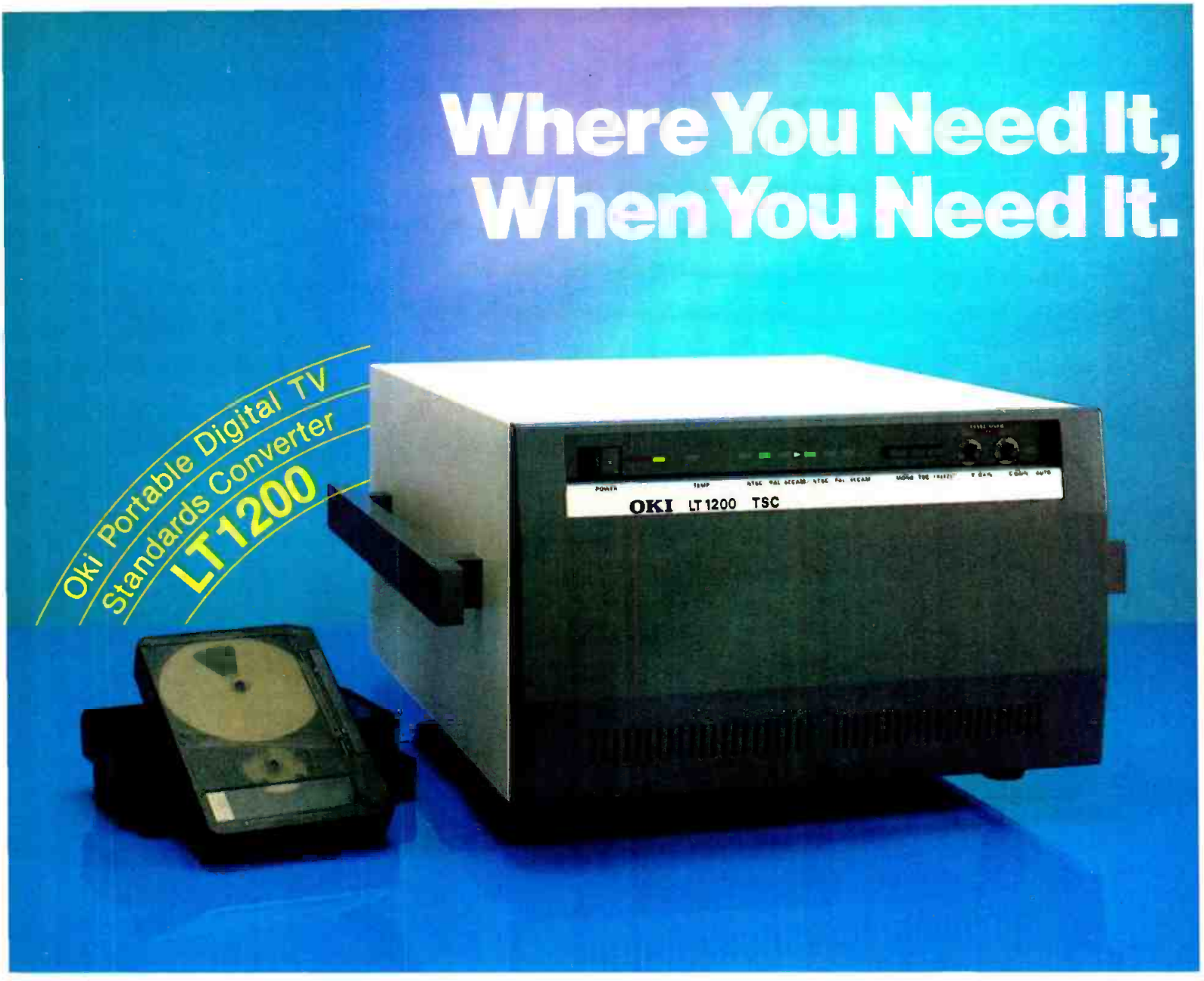
Exclusive representative in Arkansas, Louisiana, Oklahoma and Texas for ARVIN/DIAMOND, RAMKO RESEARCH, C.N. ROOD/MARCOM and TFT, Inc. Also Phillystran, Cablewave, Anixter-Mark, dbx, Dale, Orban, Downlink Systems and others.

A Compact, Expandable, Video Cart System that You Can Afford.
LA-KART™
SERIES ONE BY LAKE
Under $90,000.
Leasing Plans Available
Broadcast Rep Inquiries Invited
Lake Systems / Control Video
Contact: Lake Systems Corporation, 55 Chapel Street, Newton, MA 02160 (617) 244-6881 TWX 710 335 1639

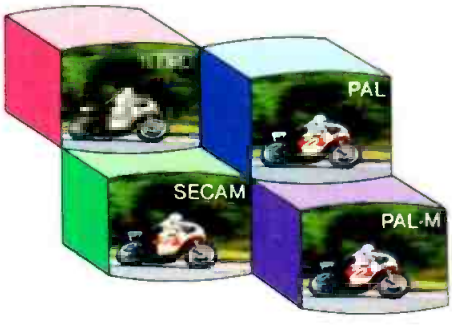
Circle 223 on Reader Service Card

www.americanradiohistory.com

Where You Need It, When You Need It.



The need for TV standards conversion doesn't stop at the studio door. That's why Oki developed the portable LT 1200 Digital TV Standards Converter. The cost performance of this system sets the industry standard. And its reliability in the field as well as in rugged use in broadcast stations has earned the LT 1200 a reputation for dependable performance. Operation is totally automatic and totally simple. For converting NTSC, PAL, SECAM, or PAL-M, leave it to the LT 1200. Wherever you are.



Oki also produces the high-end LT 1015Σ and LT 1100Σ Digital TV Standards Converters.

In the U.S.A. and Canada, contact:
OKI Electric Overseas Corp.
One University Plaza,
Hackensack, New Jersey
07601 U.S.A.
Tel: 201-646-0011—0015
TWX: 7109905004 OKI ELEC HAK

In Europe, contact:
Technology Resources S.A.
27-29 Rue Des Poissonniers
92200 Neuilly-sur-Seine, France
Tel: 747-4717, 747-7051
Telex: 42610657 TERES

Head Office:
Overseas Marketing & Sales
10-3, Shibaura 4-chome,
Minato-ku, Tokyo 108, Japan
Tel: (03) 454-2111
Telex: J22627
Cable: OKIDENKI TOKYO

OKI
electric industry company, ltd.

Agent or Distributor inquiries invited.

Circle 224 on Reader Service Card

www.americanradiohistory.com

LINROSE ELECTRONICS
San Antonio
512 342-8849
ATI see ad pg. 224

MAGNETIC MEDIA CORP.
Austin
512 451-0138
Dallas
214 931-0404
See ad this pg.
3M PRO A/V see ad pgs. 95, 169
Panasonic see ad pg. 107

DUKE McLANE
Dallas
214 247-5999
Ward Beck see ad Cover 4

MID COM, INC.
Arlington
817 461-2211
Clear-Com see ad pg. 111

MZB & ASSOC.
Austin
512 454-4371
Dallas
214 233-5535
Houston
713 523-4333
713 448-0881
See ad pg. 55
Conrac see ad pg. 57
Listec see ad pg. 182
NEC America see ad pgs. 40, 143

PARCOM
Southlake
817 481-7221
See ad pg. 187
Ramko Research see ad pg. 5
TFT, Inc. see ad pg. 198

PEREGRIN SOUTHWEST REPS.
Houston
713 772-6765
Eventide see ad pgs. 28, 161

GORDON PETERS
Arlington
817 467-2990
ADM Technology see ad Cover 2

PROFESSONAL AUDIO SERVICES
Fort Worth
817 451-7643
See ad this pg.

TEXAS

MAGNETIC MEDIA CORP
DALLAS, TEXAS
(214) 931-0404
Broadcast Video Systems for Professional users.
Hitachi broadcast VTR and camera equipment, C.V.S., Lenco, Tektronix, Grass Valley, C.E.I. Cameras, Convergence Editing Systems, Remote vans, Sony, JVC and Panasonic.
Complete design, installation, service and training.
Additional offices:
Austin, Amarillo, Albuquerque, Denver, Odessa Houston

TEXAS

PROFESSIONAL AUDIO SERVICES

3837 East Loop 820 South, Fort Worth, TX 76119
(817) 451-7643, 1-800-433-7668

Full line of equipment and supplies including: 3M, Fidelipac, Stanton, Electro-Voice, Robins, Nortronics, Micro-Trak, Rusland, Telex, Ampex Capitol. Audiolab, Audio-technia, Marantz Cartridge Reloading Service. Free Catalog.

RECORDING SUPPLY
Austin
512 454-9096
Agfa see ad pg. 204

REEVES PHOTOGRAPHIC SALES INC.
Dallas
214 631-9730
800 527-9482
Tiffen see ad pg. 33

REP TECH, INC.
Terrell
214 222-2131
Beyer Dynamic see ad pg. 213

SAVCO
Richardson
214 234-1841
ATI see ad pg. 224

SIBONEY COMMUNICATIONS, INC.
Irving
214 258-8470
Panasonic see ad pg. 107

SOUTHWEST PROFESSIONAL AUDIO
Austin
512 443-4567
MCI/Sony see ad pg. 83

GENE SUDDUTH CO.
Poris
214 785-5764
Datatek see ad pg. 51
Hedco see ad pg. 190
QSI see ad pg. 164

GUARANTEE RADIO SUPPLY CORP.
Laredo
512 722-3233
Varian Eimac see ad pg. 89

TEXAS VIDEO
Dallas
214 341-1771
Emcee see ad pg. 142
3M PRO A/V see ad pgs. 95, 169

UNITED FILMS 16, INC.
Houston
713 521-1343
Panasonic see ad pg. 107

VIDEO SYSTEMS, INC.
Dallas
214 361-9053
3M PRO A/V see ad pgs. 95, 169

VIDEO SYSTEMS, INC.
Houston
713 686-9651
Listec see ad pg. 182
3M PRO A/V see ad pgs. 95, 169

BOB WALTON
Aransos Pass
512 758-8098
Moseley Assoc. see ad pg. 131

WESTBROOK AUDIO, INC.
Dallas
214 699-1203
Agfa see ad pg. 204

GARY YOUNG
Arlington
817 261-0007
MCI/Quantel see ad pg. 63

Utah

JOHN AXTELL & ASSOC.
Englewood, CO
303 779-1731
Maxell see ad pg. 65

BALLARD SUPPLY CORPORATION
Salt Lake City
801 972-2430
Varian Eimac see ad pg. 89

CLEVELAND ENT. OF COLORADO, INC.
Salt Lake City
801 355-8424
Philips T & M see ad pg. 171

DIDIER/DENVER
Evergreen, CO
303 674-6000
See ad pgs. 157, 196
TFT, Inc. see ad pg. 198

DYMA ENGINEERING
Taos, NM
505 758-8686
NEC America see ad pgs. 40, 143

HALL ELECTRONICS
Boise, ID
208 376-1663
TFT, Inc. see ad pg. 198

J.F. HURLBUT CO.
Golden, CO
303 279-7796
Allen Avionics see ad pg. 168

INNOVATIVE CONCEPTS, INTL.
Redondo Beach, CA
213 540-5684
Elector see ad pg. 37

RIA CORPORATION
Salt Lake City
801 486-8822
Asaca/Shibasoku see ad pg. 82
Broadcast Microwave see ad pgs. 15, 140
Emcee see ad pg. 142
Moseley Assoc. see ad pg. 131

SKAGGS VIDEO SALES
Salt Lake City
801 539-1427
Conrac see ad pg. 57
3M PRO A/V see ad pgs. 95, 169
MCI/Quantel see ad pg. 63

SOUNDS PRO SALES
Denver, CO
303 422-6869
Beyer Dynamic see ad pg. 213

www.americanradiohistory.com

Vermont

CRAMER
Needham Heights, MA
617 449-2100
CMX/Orrox see ad pg. 36

HIGH-TECH SALES INC.
Wayland, MA
617 653-3838
Allen Avionics see ad pg. 168

H.M. HOLZBERG ASSOC.
Totowa, NJ
201 256-0455
NEC America see ad pgs. 40, 143
TFT, Inc. see ad pg. 198

PRS, INC.
Bostan, MA
617 254-2110
800 343-3001
Harrison Systems see ad pg. 7

R.G. ASSOCIATES, INC.
Millis, MA
617 376-2044
Beyer Dynamic see ad pg. 213

ALAN SARFATY & ASSOC.
Great Neck, NY
516 466-6770
Calzone Case Co. see ad pg. 14

SPHERE ASSOCIATES
Reston, VA
703 471-1230
Cetec Vega see ad pg. 191

F.M. VALENTI, INC.
Lexington, MA
617 861-0089
Maxell see ad pg. 65

Virginia

ALPHA AUDIO
Richmond
804 358-3852
See ad pg. 29
ATI see ad pg. 224

AUDIO TECHNICAL SERVICES, LTD.
Vienna
703 938-5115
Harrison Systems see ad pg. 7

AVEC ELECTRONICS
Norfalk
804 627-3502
3M PRO A/V see ad pgs. 95, 169

BROADCAST CONSULTANTS
Leesburg
703 777-6500
Moseley Assoc. see ad pg. 131

BOB DIX, INC.
Marion
703 783-2001
Moseley Assoc. see ad pg. 131

EASTERN SCIENTIFIC MARKETING
Alexandria
703 573-3900
Philips T & M see ad pg. 171

EME
Williamsburg
804 253-0171
NEC America see ad pgs. 40, 143
TFT, Inc. see ad pg. 198

DAVID GREEN BROADCAST CONSULTANT
Leesburg
703 777-8660
Aristocart see ad pg. 12
ATI see ad pg. 224
ESE see ad pgs. 134-135

RICHARD LEWIS SALES
Glenside, PA
215 886-1555
Beyer Dynamic see ad pg. 213

MEDIA ASSOCIATES
Fairfax
703 978-3550
Agfa see ad pg. 204

MIDWEST TELECOMM
Virginia Beach
804 464-6256
3M PRO A/V see ad pgs. 95, 169

PEIRCE-PHELPS, INC.
Rockville, MD
301 984-7979
CMX/Orrox see ad pg. 36

PROFESSIONAL PRODUCTS
Richmond
804 794-2585
Hitachi see ad pg. 156

THE PROMAR GROUP
Raleigh, NC
919 467-5466
Maxell see ad pg. 65

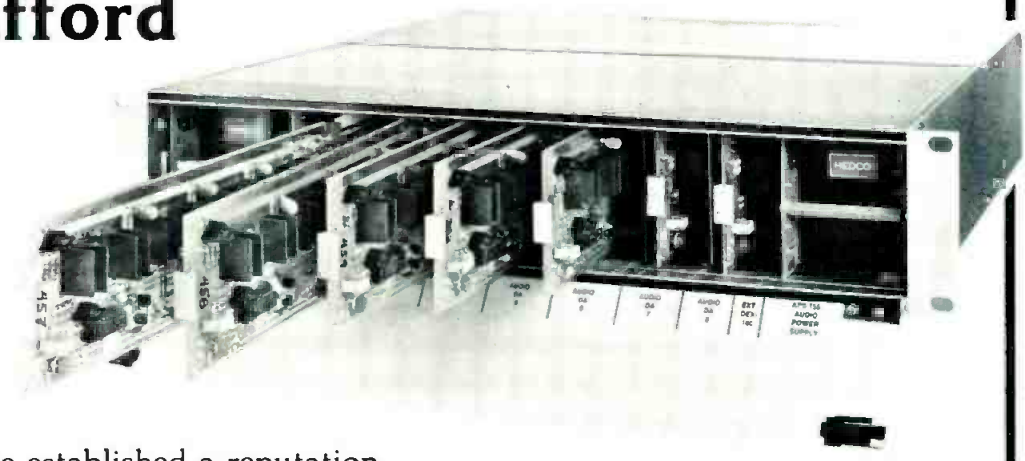
ALAN SARFATY & ASSOC.
Great Neck, NY
516 466-6700
Calzone Case Co. see ad pg. 14

ROBERT SLYE ELECTRONICS, INC.
Arlingtan
703 525-7272
Auditronics see ad pgs. 70-71, 172
Conrac see ad pg. 57

Broadcast Quality Video Distribution You Can Afford

Now Available

- VIDEO
- CLAMPING
- EQUALIZING
- LINEAR PULSE
- SUBCARRIER
- SYNC STRIP



In just two years we have established a reputation for reliable, TRANSPARENT distribution equipment at reasonable prices.

Compare a full frame to any brand with equivalent specs—you'll get more from HEDCO.

Try our Line of Audio and Remote Gain DA's too

HEDCO

New

CALL FOR OUR A/V DISTRIBUTION CATALOG • 916/173-9524

HUGHES ELECTRONIC DEVICES CORP. P. O. Box 1985, Grass Valley, CA 95945

Circle 175 on Reader Service Card

www.americanradiohistory.com

Brilliant performer.

NEW WIRELESS

The Model 82 condenser wireless microphone has been added to Cetec Vega's professional hand-held line. The Model 82 incorporates the popular Shure SM85 condenser element and attractive black windscreen to provide:

- Minimal handling noise, reduced mechanical vibration, and virtually no "boominess" (by means of controlled low-frequency rolloff).
- Clean reproduction of close-up vocals with moderate proximity effect.
- "Crispness" and presence with high-definition midrange.
- Clear, scintillating highs with crisp upper register.
- Cardioid pickup pattern for effective rejection of off-axis sounds.

All Cetec Vega hand-held wireless microphones (including the Model 80 with the Electro-Voice EV-671 dynamic element and the Model 81 with the Shure SM58 dynamic element) have an attractively contoured black case with internal antenna.

Used with Cetec Vega professional wireless receivers, the FM systems operate on any crystal-controlled frequency between 150 to 216 MHz, at a range up to 1000 feet or more. Transmit-to-receive frequency response is almost perfectly flat from 100 Hz to 12 kHz with gentle rolloffs to 40 Hz and 15 kHz. Total harmonic distortion is typically 1/2 percent. System dynamic range is 90 dB when "Dynex" (transmit compression and receive expansion) is incorporated, with a resulting low noise floor.

Cetec Vega hand-held wireless microphones are newly redesigned for 20 to 30 percent additional battery life, using a commonly available 9-volt alkaline battery (Duracell recommended). Microphone sensitivity is easily adjustable with an audio gain control on the bottom, with an adjacent LED indicator to verify optimum setup. Power and audio on/off switches are also conveniently located on the bottom.

Write or call for further information and location of your nearest dealer: Cetec Vega, P.O. Box 5348, El Monte, CA 91731. (213) 442-0782
TWX: 910-587-3539
In Canada: A.C. Simmonds & Sons Ltd.

Cetec Vega
Division of Cetec Corporation

Circle 225 on Reader Service Card

www.americanradiohistory.com

SPHERE ASSOCIATES
Reston
703 471-1230
Cetec Vega see ad pg. 191

SYMCO, INC.
Virginia Beach
804 463-4598
FOR-A see ad pg. 175

VANGUARD ENGINEERING SALES, INC.
Alexandria
703 768-1660
Allen Avionics see ad pg. 168

WILTRONIX, INC.
Washington Grove, MD
301 258-7676
NEC America see ad pgs. 40, 143

Washington

ALLIED BROADCAST EQUIPMENT
Federal Way
206 927-4337
ATI see ad pg. 224
Auditronics see ad pgs. 70-71, 172

BENNETT ENGR. ASSOC. INC.
Mercer Island
206 232-3550
Datatek see ad pg. 51
MCI/Quantel see ad pg. 63

BROADCAST SUPPLY WEST
Tacoma
206 565-2301
Aristocart see ad pg. 12
ATI see ad pg. 224
ESE see ad pgs. 134-135
Moseley Assoc. see ad pg. 131

COMPONENTS WEST, INC.
Renton
206 271-5252
Allen Avionics see ad pg. 168

CUSTOM VIDEO SYSTEMS
Seattle
206 365-5400
3M PRO A/V see ad pgs. 95, 169

INNOVATIVE CONCEPTS, INTL.
Redondo Beach, CA
213 540-5684
Elector see ad pg. 37

MARCOM
Seattle
206 621-9633
Shively Labs see ad pg. 149
TFT, Inc. see ad pg. 198

MATRIX MARKETING
Seattle
206 789-5990
Cetec Vega see ad pg. 191

TOM McGOWAN
Edmonds
206 546-6264
MCI/Quantel see ad pg. 63

NORTHMAR, INC.
Seattle
206 524-5170
Beyer Dynamic see ad pg. 213

NORTH SHORE MARKETING, INC.
Seattle
206 524-8672
James B. Lansing see ad pg. 203
UREI see ad pg. 181

NORTHWEST BROADCAST SYS.
Seattle
206 525-6974
Moseley Assoc. see ad pg. 131

NORTH-WEST INDUSTRIES
Seattle
206 722-7400
Conrac see ad pg. 57

NU-COM ASSOC.
Seattle
206 364-9911
Hedco see ad pg. 190
NEC America see ad pgs. 40, 143

ROBERT E. PRIEBE COMPANY
Seattle
206 682-8242
Varian Eimac see ad pg. 89

PRO AUDIO SYSTEMS
Seattle
206 367-6800
MCI/Sony see ad pg. 83

PROFESSIONAL REPRESENTATIVES CORP.
Foster City, CA
415 570-5055
Maxell see ad pg. 65

TASCO, INC.
Bellevue
206 453-1414
Philips T & M see ad pg. 171

TOPP ENGINEERING SALES CORP.
Bellevue
206 747-5408
Hipotronics see ad pg. 200

West Virginia

ASHBY ASSOC.
Dayton, OH
513 252-5627
Allen Avionics see ad pg. 168

A Brilliant, New Cartridge Designed For Today's High Technology Records.

At last, a low impedance cartridge which exceeds moving coil performance with moving magnet reliability. The Stanton 981LZS provides the highest level of performance with very low tip mass, the widest frequency response and unsurpassed trackability. The moving magnet (Samarium Cobalt design) offers a truly new, exciting and different sound experience.
Stanton Magnetics, 200 Terminal Drive, Plainview, NY 11803

The 981LZS From STANTON
THE CHOICE OF THE PROFESSIONALS™

Circle 246 on Reader Service Card

swintek
The Leading Name In Cordless Microphone Systems

Transmitters small enough to be hidden almost anywhere, tiny microphones that are so unobtrusive that they probably won't even be noticed, hand-held microphones without the encumbrances of hundreds of feet of wire — that's what cordless microphone systems are all about. But there's one more factor of prime importance — reliability. If you're in television, radio or film and you want a cordless microphone system that not only offers the most advanced state-of-the art electronics but the highest reliability rating in the industry, Swintek is the answer. There's a Swintek transmitter and receiver to fit your specific needs, no matter what your requirements. Check with us today about the greatest name in cordless microphone systems — Swintek.

alan gordon enterprises inc.
1430 N. Cahuenga Blvd., Hollywood, CA 90028
Telephone: (213) 466-3561 • (213) 985-5500
TWX: 910-321 4526 • Cable: GORDENT

Circle 253 on Reader Service Card

www.americanradiohistory.com

The next generation in editing systems.

Mach One® Series II.

Mach One from Fernseh has always been the fastest videotape editor on the market. The easiest-to-use.

And because it's software-based, we can make it more powerful with software changes.

That's exactly what we've done with the new Mach One Series II—the second-generation system.

Powerful new features.

Series II has all the features of the original Mach One. Plus six important new features that not only let you edit faster than ever, but give you unique capabilities and conveniences.

Dual-channel audio control. This exclusive feature gives you complete and independent control over two separate audio tracks in addition to the video channel.

Variable speed control. You can select any of 16 shuttle-jog speeds in either direction—all the way from freeze frame to maximum VTR speed.

Programmable slow motion. Once you've selected a speed, it's displayed on the screen and you can program it in the edit list (for example, "half-speed at two minutes in, three-quarter-speed at three minutes in," and so forth). The programmed sequence is then completely repeatable.

Updated edit list formatting. Mach One Series II gives you 6-digit alphanumeric reel numbers, audio channel 1 and 2 entry, additional events displayed on the screen, and other edit list features.

Cluster-event programming. A Mach One exclusive. This powerful feature lets you program extremely complicated multiple events, known as "elements," in a "cluster" and treat them as a single event. For example, a complex series of switcher wipes, dissolves, or keys—together with digital video effects—can be quickly put together and previewed or recorded *in one pass* rather than event-at-a-time.

Screen highlighting. We've made the Series II edit screen easier to work with. Now it brightens the edit line you're working on and simultaneously dims the rest of the screen. It's easy on the eyes, easy on the nerves, and never lets you lose your place—even for a second.

The editor's editor.

Mach One Series II in your editing room will give you speed and ease of operation that translates into creativity and profits.

You need the new generation in computer-assisted editing for your post production. And the new generation is exclusively Mach One Series II.

Your local Fernseh office is anxious to get you full details. Call them. Or get in touch with us directly: Fernseh Inc., P.O. Box 31816, Salt Lake City, Utah 84131, (801) 972-8000.

BOSCH

© 1982 Fernseh Inc. All rights reserved.

Circle 226 on Reader Service Card

www.americanradiohistory.com

N. BROWNING & CO.
Dayton, OH
513 222-3946
Calzone Case Co. see ad pg. 14

COMMERCIAL VIDEO REPRESENTATIVES
Reisterstown, MD
301 252-8919
Maxell see ad pg. 65

EME
Williamsburg, VA
804 253-0171
NEC America see ad pgs. 40, 143

KAVCO
Dayton, OH
513 898-2003
CMX/Orrox see ad pg. 36

MARKETING ANALYSTS, INC.
Worthington, OH
614 436-2808
Beyer Dynamic see ad pg. 213

MIDWEST TELECOMM
Nitro
304 722-2921
3M PRO A/V see ad pgs. 95, 169

J.B. PARENT CO.
Columbus, OH
614 459-5947
Cetec Vega see ad pg. 191

WILTRONIX, INC.
Washington Grove, MD
301 258-7676
NEC America see ad pgs. 40, 143

WISCONSIN

ENTERPRISES INCORPORATED

6945 Cummens Court, Hartford, WI 53027
(414) 966-3303

Studio Equipment, STL, Towers, Directional Arrays, Antennas, Transmitters, Audio Processing—Competitive Pricing with After Sales Support—15 Years of Broadcast Engineering Experience! Design, Planning and Installation Services.

Wisconsin

AMATEUR ELECTRONICS SUPPLY, INC.
Milwaukee
414 442-4419
Varian Eimac see ad pg. 89

AUDIO ASSOCIATES, INC.
Madison
608 222-9697
ATI see ad pg. 224

AVC SYSTEMS, INC.
Chicago, IL
312 763-6010
Harrison Systems see ad pg. 7

ELECTRONIC INDUSTRIES INC.
Oshkosh
414 235-8930
ATI see ad pg. 224

ELECTRO-TECH MARKETING ASSOC.
Chicago, IL
312 588-4535
Allen Avionics see ad pg. 168

EMMONS ASSOCIATES
Burnsville, MN
612 890-8920
NEC America see ad pgs. 40, 143
TFT, Inc. see ad pg. 198

ENTERPRISES, INC.
Hartford
414 966-3303
See ad this pg.
Marti see ad pg. 202
Orban see ad pgs. 35, 186
Ramko Research see ad pg. 5
Shively see ad pg. 149

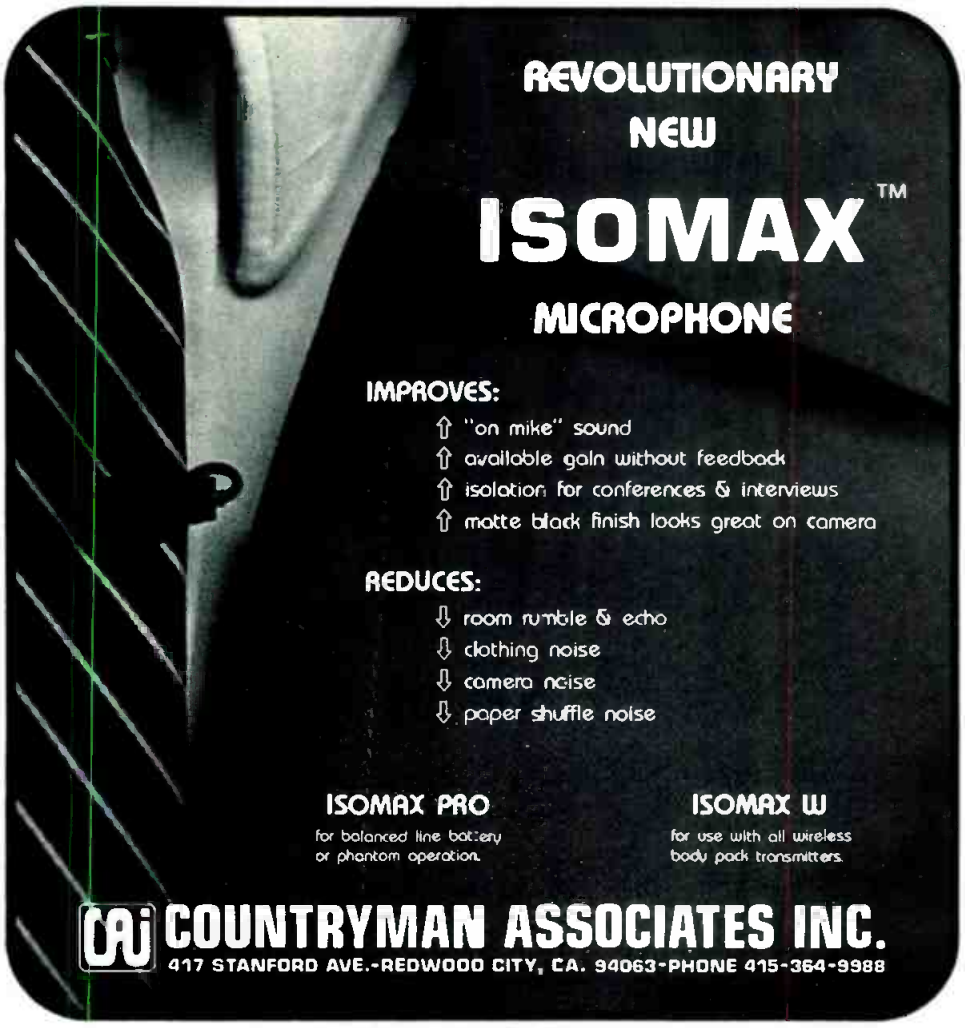
FLANNER AND HAFOOS
Milwaukee
414 259-9665
ATI see ad pg. 224
Auditronics see ad pgs. 70-71, 172

FULL COMPASS SYSTEMS
Madison
608 271-1100
Agfa see ad pg. 204
ATI see ad pg. 224
Clear Com see ad pg. 111

GO VIDEO SALES, INC.
Stoughton
608 873-6315
Hedco see ad pg. 190

KEN HAUGEN & ASSOC.
Anoka, MN
612 421-3395
Allen Avionics see ad pg. 168

MAGNETIC COMMUNICATIONS
Evanston, IL
312 869-6735
Maxell see ad pg. 65



Circle 257 on Reader Service Card

ELECTRO IMPULSE

Thanks You for Making Our Model DPTC-25KFM Dummy Load One of our Most Successful Products!

MODEL
DPTC-25KFM
Rated 25KW
DC-110MHz
VSWR 1.15:1
Useable to 200MHz

Load is Dry, Forced Air Cooled, Fully Interlocked and WARRANTEED FOR 25 MONTHS

Our New General Catalog 892 is now available upon request covering:
• Dummy Loads • Baluns • Calorimeters
• Power Meters/Attenuators

EXCELLENCE IN ENGINEERING
Electro IMPULSE, INC.
SINCE 1949

116 Chestnut St., Red Bank, N.J. 07701
Telephone: 201-741-0404

Circle 254 on Reader Service Card

www.americanradiohistory.com

Great Character Builders We Have Known...

Walt Disney, Vince Lombardi and Quantafont

The company we keep is important to us. Because we build great characters, too.

In fact we think they're the best looking characters in the industry. Take our Quantafont® Q7A for example.

Where else could you find 20 nanosecond resolution (with our patented Nanolog™ circuit), proportional spacing and 16 resident fonts at one-third the price you once had to pay for those features.

The Q7A is cost effective, expandable and covers the spectrum from editing suite to teleproduction to film subtitling to broadcasting. And it does all these things in 15 major international languages.

The company we keep *is* important to us. It's also important to you. Make Quantafont your character reference.

Introducing Q7B with word-by-word color (update your Q7A)

QUANTA

Quanta Corporation
2440 So. Progress Drive
Salt Lake City, Utah 84119
(801) 974-0992
(formerly System Concepts, Inc.)

Circle 227 on Reader Service Card

Q-105 7/82

www.americanradiohistory.com

NEW HORIZONS
Bannockburn, IL
312 234-5911
Beyer Dynamic see ad pg. 213
Cetec Vega see ad pg. 191

PBF MARKETING
Chicago, IL
303 973-5300
Calzone Case Co. see ad pg. 14

TODD COMMUNICATIONS
Nekoosa
715 325-2573
3M PRO A/V see ad pgs. 95, 169

TORKELSON ASSOCIATES, INC.
Brookfield
414 784-7736
Philips T & M see ad pg. 171

VIDEO IMAGES—DIV. OF FUCHS AGENCY
West Allis
414 475-0111
Hitachi see ad pg. 156
3M PRO A/V see ad pgs. 95, 169
Panasonic see ad pg. 107

Wyoming

JOHN AXTELL & ASSOC.
Englewood, CO
303 779-1731
Maxell see ad pg. 65

DIDIER/DENVER
Evergreen, CO
303 674-6000
See ad pgs. 157, 196
TFT, Inc. see ad pg. 198

HALL ELECTRONICS
Boise, ID
208 376-1663
TFT, Inc. see ad pg. 198

INNOVATIVE CONCEPTS, INTL.
Redondo Beach, CA
213 540-5684
Elector see ad pg. 37

SOUNDS PRO SALES
Denver, CO
303 422-6869
Beyer Dynamic see ad pg. 213

J.F. HURLBUT CO.
Golden, CO
303 279-7796
Allen Avionics see ad pg. 168

VIDEO TEKNIX INC.
Casper
307 265-5396
Hitachi see ad pg. 156

Canada

ADCOM ELECTRONICS, LTD.
Toronto, ONT
416 251-3355
Dubner Computer Systems see ad pg. 17

APPLIED ELECTRONICS, LTD.
Toronto, ONT
416 252-3761
Datatek see ad pg. 51

ATLANTIC INSTRUMENTATION LTD.
Moncton, NB
Philips T & M see ad pg. 171

ATLANTIC INSTRUMENTATION LTD.
St. John's, NF
709 754-2780
Philips T & M see ad pg. 171

ATLANTIC INSTRUMENTATION LTD.
Dartmouth, NS
902 463-3344
Philips T & M see ad pg. 171

CAMARTRON COMMUNICATIONS, INC.
Willowdale, Toronto, ONT
416 494-6978
NEC America see ad pgs. 40, 143

A.B. CHANCE CO. OF CANADA LTD.
Scarborough, ONT
416 759-1144
Hipotronics see ad pg. 200

COMAD COMM. LTD.
Rexdale, ONT
416 245-1734
ATI see ad pg. 224
Comex see ad pg. 136
ESE see ad pgs. 134-135

COMMERCIAL ELECTRONICS LTD.
Vancouver, BC
604 669-5525
MCI/Sony see ad pg. 83

ELECTRO & OPTICAL SYSTEMS
Scarsborough, ONT
416 439-9333
CMX/Orrox see ad pg. 36
MCI/Quantel see ad pg. 63
Merlin see ad pg. 16

GENERAL PHOTOGRAPHIC
Scarborough, ONT
416 759-9301
Tiffen see ad pg. 33

GLENTRONIX LTD.
Don Mills, ONT
416 444-8497
Conrac see ad pg. 57

E.S. GOULD MARKETING
Montreal, QUE
514 342-4441
UREI see ad pg. 181

J-MAR ELECTRONICS, INC.
Toronto, ONT
416 421-9080
Auditronics, Inc. see ad pgs. 70-71, 172

McCURDY RADIO INDUSTRIES LTD.
Toronto, ONT
416 751-6262
Aristocart see ad pg. 12

MERITRON LTD.
Downview, ONT
416 635-9456
Conrac see ad pg. 57

MSC ELECTRONICS LTD.
Downsview, ONT
416 661-4180
Shively Labs see ad pg. 149
TFT, Inc. see ad pg. 198

NORTEC WEST LTD.
Calgary, ALB
403 252-8141
Auditronics, Inc. see ad pgs. 70-71, 172

NORTEC WEST
Vancouver, BC
604 872-8525
Auditronics see ad pgs. 70-71, 172
Conrac see ad pg. 57
MCI/Quantel see ad pg. 63

C.D. NOVA LTD.
Calgary, ALB
403 283-2813
Philips T & M see ad pg. 171

C.D. NOVA LTD.
Prince George, BC
604 964-7676
Philips T & M see ad pg. 171

OAKWOOD AUDIO LABS. LTD.
Winnipeg, MAN
204 786-6715
ATI see ad pg. 224

PINEWAY ELECTRONICS LTD.
Don Mills, ONT
416 449-1343
ATI see ad pg. 224

A.C. SIMMONDS & SONS
Pickering, ONT
416 839-8041
Cetec Vega see ad pg. 191

STUDIOTECH CORPORATION
St. Laurent, QUE
514 336-5142
MCI/Sony see ad pg. 83

TELE-TECH ELECTRONICS LTD.
Markham, ONT
416 495-5646
MCI/Sony see ad pg. 83

L.A. VARAH LTD.
Vancouver, BC
604 873-3211
Aristocart see ad pg. 12

Mexico

TECKNOMERICA, S.A.
905 593-2046
MCI/Quantel see ad pg. 63

Puerto Rico

BONNIN ELECTRONICS
Santurce
809 725-4765
Agfa see ad pg. 204

ELECTREX COMPANY
Miami, FL
305 651-5752
TFT, Inc. see ad pg. 198

MARIO R. FRANCESHINI
Santurce
809 723-4511
Hipotronics see ad pg. 200

PUEBLO COMMUNICATIONS, INC.
San Juan
809 790-5001
ATI see ad pg. 224

RAHOLA, INC.
Santurce
809 722-0165
Tiffen see ad pg. 33

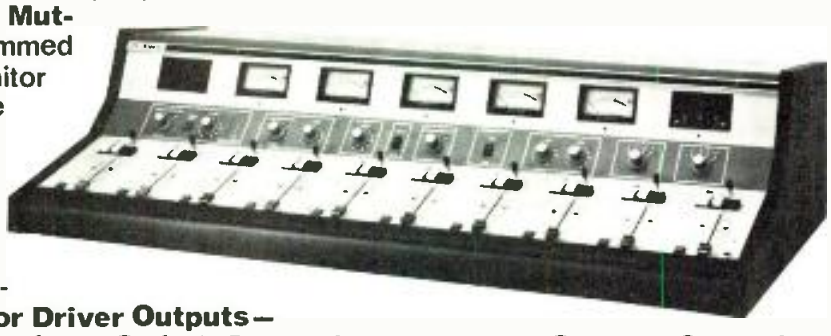
WYOMING

DIDIER DENVER
Evergreen, CO
303/674-6000
AM · FM · TV

www.americanradiohistory.com

Everything you want in an audio console:

4 Models—8 and 10 mixer dual stereo with rotary or linear faders • **Transformer Balanced Inputs and Outputs** • **3 Inputs Per Mixer**—internal pads allows mic/line selection on the same mixer • **Two 4-Input Auxiliary Input Selectors**—may be assigned to any mixer • **Pre-fader Pushbutton Cue**—in addition to normal CCW fader cue position • **LED Status Indicators**—color coded to aid in instant identification of function selectors • **Momentary or Continuous Remote Control Contacts**—internally selectable, also controls optional digital timer reset/start • **Full Metering Capability**—two meters standard, up to four meters and/or digital clocks and timers optionally available, all meters provided with LED peak indicators • **Gain Selectable Microphone Preamps**—provided with center tap access for phantom condenser microphone power, processor input/output port with buffer amplifier for outboard compressors, limiters, etc. • **Programmable Muting Logic**—internal pin-programmed matrix allows any selection of monitor and cue muting for the first five mixer positions • **Pushbutton Aural Phase Test** • **Announcer's Microphone Intercom-Air Selector** • **Full Dual Channel Operation**—independent program and audition assignment pushbuttons • **Five Monitor Driver Outputs**—four muted, one non-muted • **All Mixers Switch Selectable to Mono or Stereo** • **Ground-Plane Techniques Used Throughout for Increased RF Immunity** • **Selectable Internal or External Master Level Controls** • **Accessories and Options**—mono mixdown, high impedance (cassette) line input plug-ins, reference oscillator/line input plug-in, additional microphone input plug-ins, digital clock, digital timer, linear faders.



LPB® citation *series*

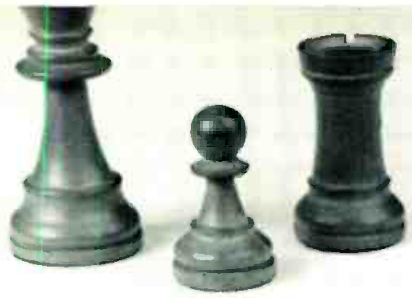
LPB Inc. • 28 Bacton Hill Road • Frazer, PA 19355 • (215) 644-1123

Manufacturers and Distributors of Broadcast Equipment since 1960

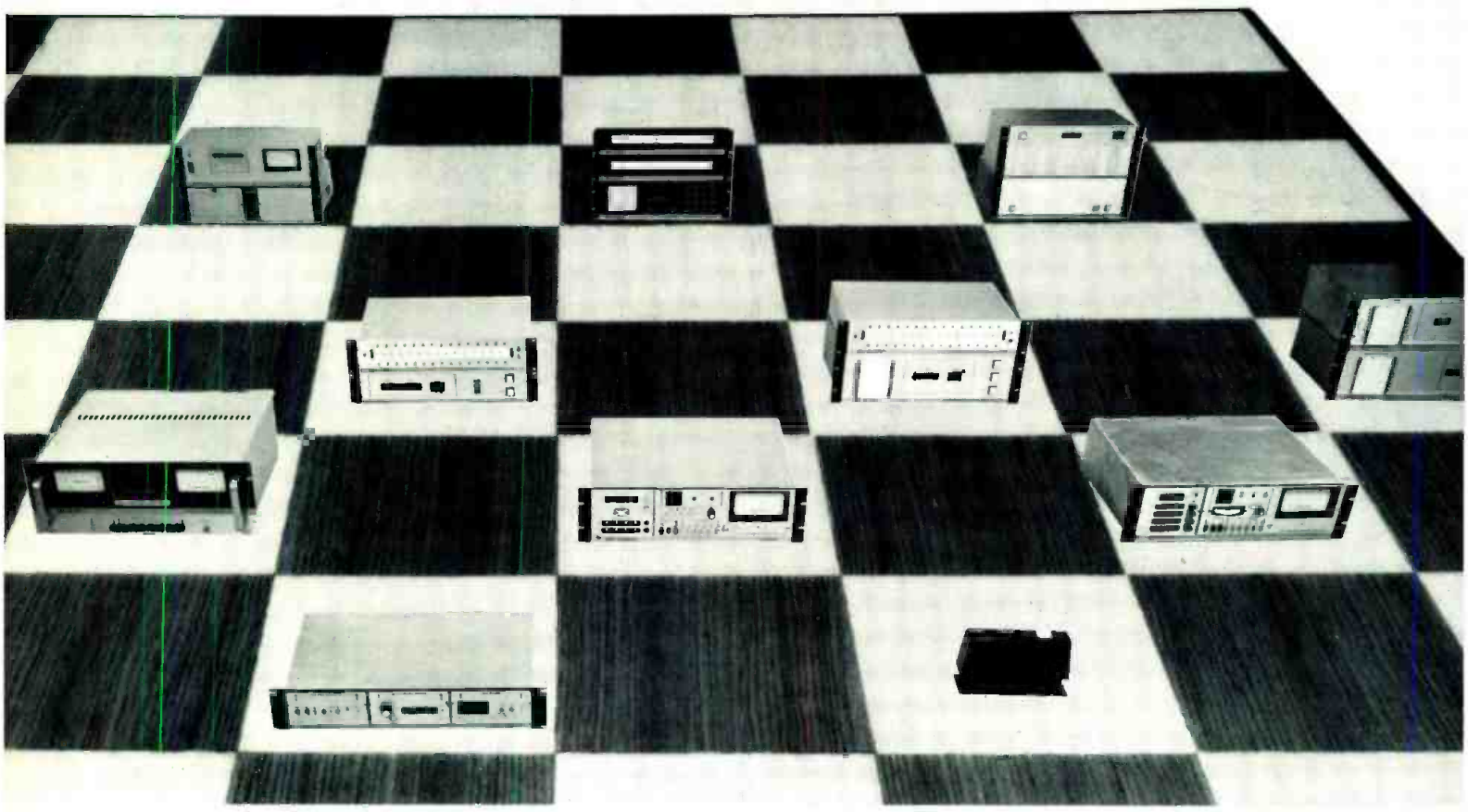
© 1981 LPB Inc.

Circle 228 on Reader Service Card

www.americanradiohistory.com



BROADCAST EXPERTISE...



ACROSS THE BOARD!

Since 1970, TFT, Inc. has been a pioneer in state-of-the-art broadcast technology. As such, we have been able to always keep one move ahead in cost-effective design to provide reliable, versatile and innovative products to the broadcast industry.

TFT was the first to use frequency synthesized circuits in its full line of AM, FM, TV, stereo and SCA **Modulation Monitors.** TFT concepts in **Remote Control Systems** now allow expansion all the way to microprocessor based data logging, display and alarm systems. In the relatively new field of **Studio Transmitter Links,** TFT has made major contributions through the use of IF modulation transmitters and pulse counting discriminators to improve both S/N ratio and stereo performance.

Even in the **Emergency Broadcast System (EBS),** TFT has taken a leadership role in the development of both EBS generators and receivers.

Now, it's your move! Call or write TFT today for full facts on their winning product lines.

(TIME & FREQUENCY TECHNOLOGY)

TFT INC

3090 OAKMEAD VILLAGE DR.
SANTA CLARA, CA 95051
(408) 727-7272 TWX 910-338-0584

Circle 229 on Reader Service Card

www.americanradiohistory.com

DBS and the Fowler Commission

By Harry Cole
FCC Counsel

THE BROADCAST INDUSTRY took one more giant step into the space age this past summer when the Federal Communications Commission released its Report and Order establishing, at least on an interim basis, the direct broadcast satellite service (DBS). While actual DBS service is still not expected to begin for several years, it is already being viewed as an integral part of the video explosion, joining cable television, low-power television, subscription television and multipoint distribution systems as they challenge the established VHF/UHF broadcast industry for audience and revenues.

From a regulatory standpoint, the rules and policies governing DBS offer insight not only into the general underlying philosophy of the Fowler Commission, but also into a couple of other areas where DBS is most likely to have a significant impact on the broadcast industry. For these reasons broadcasters—whom we must now refer to as "terrestrial broadcasters," so as not to mistake them for their extraterrestrial, *i.e.* DBS, rivals—would do well to reflect upon the arrival of DBS.

As everyone is probably aware by now, DBS is a system in which a signal is beamed up to a geostationary satellite, which in turn retransmits the signal back down to earth for reception by dish antennas. In that respect it is identical to satellite operation as it has always existed. The difference is that the dish antennas on the receiving end are not large ones connected to local broadcast stations or cable systems, which would then retransmit the incoming signal to their audiences. Rather, the DBS dishes are small and installed at individual homes, thus permitting the consumer to take programming directly from the satellite without the need for an intermediate broadcaster or cable operator. The simplicity of the receiving equipment is made possible by the design of the satellite's transmitting equipment, which is substantially more powerful than equipment aboard satellites now in use. The result, of course, is that DBS can provide to an extremely broad area—for example, an entire time zone—a signal strong enough to be picked up by relatively small and uncomplicated receiving dishes.

Of the various broadcast or quasi-broadcast services currently in development, DBS is the one linked most closely to the Fowler Commission. Originally proposed as an abstract concept in the waning days of the Ferris Commission in November 1980, DBS was given its focus and definition in June 1981, when the Commission, under Chairman Fowler, adopted a Notice of Proposed Policy Statement and Rulemaking setting out the regulatory approach initially to be taken vis-a-vis DBS.In adopting its DBS Report and Order last July, the Commission decided that that initial approach was indeed well advised and should continue on as the governing DBS policy, unless and until the Commission's growing experience in the area might dictate that some changes are in order. Since DBS is an entirely new service, with virtually no preestablished rules or policies, it provided the Fowler Commission with an opportunity to set up a model service, a service subject only to those limitations thought appropriate by the current Commission. In this respect DBS is different from, say, low-power TV, which developed in the traditional confines of TV broadcasting and translator rules, and which was thus bound from the start to acquire more the trappings of a broadcast hybrid than of an entirely new service. DBS, on the other hand, *is* entirely new, and presented the Commission with an empty canvas on which to paint its own idea of an ideal regulatory structure.

Not surprisingly, the regulatory structure adopted by the Commission is extremely limited. Chairman Fowler's desire to cut back as much as possible on Commission involvement in the private sector is well known, and DBS provided an opportunity to showcase that desire. Interestingly, the outlines of DBS reflect concepts which either have been or may be applied to broadcasting. The following is a brief summary of some of those areas:

- **Overall regulation.** As indicated, the primary thrust of the DBS rules is that there should be an absolute minimum of regulation, in order to let the nascent DBS industry develop pursuant to marketplace forces rather than artificial governmental restraints.
- **Ownership restrictions.** No restrictions on the ownership of DBS systems were imposed. The rationale for this was twofold. First, according to the Commission, there is

www.americanradiohistory.com

already evidence of real competition within the DBS market. Second, there will probably be a great deal of competition among various video services (*e.g.*, low-power TV, regular broadcast TV, cable TV, etc.) by the time DBS gets off the ground. In view of all this competition, the Commission reasoned, it is unlikely that any one or two entities will obtain undesirable control over the DBS market and, therefore, the Commission need not set up regulatory restraints on ownership. In addition, the Commission suggested that ownership restrictions might discourage potential DBS applicants, including some of the "most experienced and capable suppliers," and thus might deprive the public of potential sources of high-quality service.

This willingness to trust marketplace forces has also been advanced as a basis for Chairman Fowler's desire to eliminate most, if not all, of the ownership restrictions applicable to regular broadcasters. However, it is much easier not to impose such rules on a new service like DBS than it is to eliminate rules which have for so long been on the books and, as a result, ingrained into the collective consciousness of the Commission, the industry, and the public.

- **Financial showing.** DBS applicants will be expected to make only limited showing of their ability to pay for the costs of construction and operation. Instead, the Commission has imposed a one-year time limit within which successful applicants will have to have commenced construction or, at least, completed contracting for construction. They will also have six years within which to become operational.

This approach, which de-emphasizes pre-grant funding commitments and looks, instead, to post-grant performance, resembles the trend over the last year or so with respect to the financial requirements imposed on regular broadcast applicants. It takes that trend, however, several steps farther down the line. Even now, most applicants seeking to enter the broadcast field must still certify that they have sufficient funds available at the time of application. In view of the fact that even the cost of the most elaborate broadcast application seldom approaches anything like the multimillion-dollar cost of a DBS system, the Commission's decision not to require any substantial financial showing of DBS applicants demonstrates its nonregulatory commitment.

- **Technical regulation.** Again, the watchword here is "minimal." There are two primary reasons for this. First, the area of satellite communications is governed, as is all radio spectrum usage, by international agreement. A Regional Administrative Radio Conference scheduled for next year will consider, among other things, technical standards to be applied to broadcast satellite service in the 12 GHz band, *i.e.*, the band allocated to DBS. Thus, the Commission is biding its time to see what standards it may, be international agreement, have to impose. The second reason is simply that the Commission recognizes that DBS technology is in its early stages and that without governmental restraints technology may develop even

SMPTE EDIT-CODE
READER AND CHARACTER-GENERATOR

THE STANDARD OF THE INDUSTRY

FEATURES: The McFadin Window™ wide range digital decoder, highly legible and unique FONT, 1-3/4" rack mounting, vertical interval display, all front panel controls, drop frame indicator, choice of Time-Code or User-Bits, regenerated Time-Code output (DUB). MODEL DR-107A

GRAY ENGINEERING LABORATORIES
504 W. Chapman Ave.
Orange, Ca. 92663 714-997-4151

Circle 230 on Reader Service Card

98% + EFFICIENT VOLTAGE REGULATION

THE PESCHEL AUTOMATIC VOLTAGE REGULATOR USING THE PESCHEL VARIABLE TRANSFORMER FEATURES:

- No Wave Form Distortion
- No Phase Shift
- No Effect on Systems Power Factor
- Very Low Internal Impedance
- Small Lightweight Design
- Extremely Reliable
- No Ferro-Resonant Core
- No Oil Cooling
- No Forced Air Cooling
- No Impedance Changing
- No SCR's

Peschel Computer Regulator also available

HIPOTRONICS INC.
DRAWER A, BREWSTER, NY 10509
914-279-8091 ■ TWX710-574-2420

Hipotronics

Circle 231 on Reader Service Card for Literature
Circle 232 on Reader Service Card for Sales Call

www.americanradiohistory.com

DELTA BROADCAST PRODUCTS

AMC-1

The Amplitude Modulation Controller is the only modulation controlling system that provides a completely closed loop around the transmitter. The sampling of actual modulation levels after the PA output network assures precise adjustment for optimum modulation levels. The AMC-1 also keeps a digital count of positive and negative overmodulation bursts for both present and previous one minute periods.

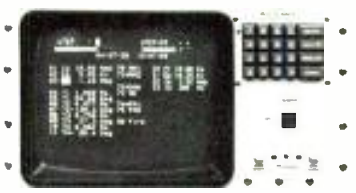
DAM-1

The Digital Antenna Monitor couples pushbutton ease of operation with digital accuracy. The DAM-1 will accept RF samples from up to 12 towers (with an auxiliary panel) and features ± 1° phase and ± 2% current ratio accuracies. Remote panels and other accessories are available.

AAM-1

The Analog Antenna Monitor gives stable phase and ratio readings even in high RF fields. Separate phase and ratio mirrored-scale meters assure accurate meter indications.

RCS-1V

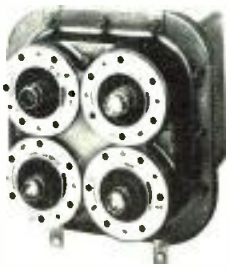


The RCS-1V Remote Control System combines microprocessor technology with simplified operation. Features include direct interface boards for antenna monitors, patented remote modulation bargraph, automatic logging, and synthesized speech telephone interface. The modular design allows the customer to plug in additional input or control boards to expand remote control capabilities even after the system is operating in the field.

APC-1

The Automatic Power Controller is your insurance against citations for over- and under-power operation. The APC-1 continuously monitors the transmitter output power, and makes automatic power adjustments with the transmitter loading control. This assures proper power adjustment at all times.

6730-E
6740-B



Designed to switch two transmitters from antenna to dummy load, the 6730E interfaces with 1 5/8 inch coaxial cable. For 3 1/8" lines, the 6740-B transfer switch is used. Either manually or remote controlled, the **Transfer Switch** is fully interlocked and can be wired to existing equipment to prevent "hot" switching.

TCA

State of the art antenna current metering **has arrived in the TCA Ammeter Systems.** Accurate, Modulation-free, temperature stable current indications are found in the TCA. Models include single and dual scale meters.

TCT

Delta's Toroidal Current Transformers provide accurate sampling current and phase values without the problems associated with sampling loops. Three output voltage ranges are available, as well as high voltage models for high-power facilities.

OIB-1

OIB-3

The Operating Impedance Bridge measures the impedance of networks, radiators, and the like while they operate under full power. VSWR as well as complex impedances of up to 400 ± j300 ohms can be measured.

The OIB-3 Operating Impedance Bridge provides extended resistance and reactance ranges, measuring up to 1000 ± j900 ohms. The bridge has a built-in carrying case and RF amplifier for improved nulling.

RG-3

The Receiver/Generator combines a two-watt RF output and a correlation detector circuit that virtually eliminates interference problems. The RG-3 can be used in conjunction with any conventional impedance bridge including the OIB series.

CPB-1

The Common Point Impedance Bridge is designed for permanent installation; and allows continuous monitoring of the common point, thus facilitating network adjustment. This model can be provided with one of Delta's TCA ammeters mounted in the front panel.

DELTA ELECTRONICS

5730 GENERAL WASHINGTON DRIVE
P.O. Box 11268 • ALEXANDRIA, VIRGINIA 22312
TELEPHONE: 703-354-3350 TWX: 710-832-0273

Circle 233 on Reader Service Card

www.americanradiohistory.com

faster, particularly in light of competitive incentives to provide superior technical service.

• **Equal employment opportunity.** To the extent that DBS operators serve as broadcasters, they will be subject to EEO requirements equivalent to those applicable to terrestrial broadcasters. It is worth noting, however, that this requirement was added to the DBS rules almost as an afterthought, apparently at the insistence of Commissioner Rivera. The relatively low level of attention given to EEO here certainly suggests that that area is not now among the Commission's highest priorities.

In view of these factors, it is clear that the regulatory, or rather "unregulatory," philosophy frequently articulated by the Fowler Commission is to be taken seriously, and can be expected to be extended to terrestrial broadcasters in due course. For now, terrestrial television broadcasters may wish to ponder three particular effects of the advent of DBS.

First is the reality of increased competition. The Commission is currently considering not one, but *nine* different proposed DBS systems. Even the Commission acknowledged that multiple systems "could be expected . . . to have a greater effect on existing broadcasters than a single system." As a result, terrestrial broadcasters should probably start to brace themselves.

Second, on a more immediate level, the Commission's DBS decision represents a clear setback for the initiation of high-definition television (HDTV). A major proponent of HDTV had argued to the Commission that DBS's use of the 12 GHz band should be restricted to systems using HDTV technology to assure a "transition" from conventional TV to HDTV. The Commission disagreed, stating that while it did indeed wish to encourage HDTV, it did not want to discourage conventional television service.

Finally, the DBS decision must be viewed as a marked departure from the "localism" approach which has governed broadcast regulation since its inception in the 1920s and 1930s. Under the laws, rules, and policies which have historically governed broadcasters, each licensee has a specific community to serve. Indeed, even the Communications Act speaks of distributing frequencies among "the several States and communities." However, DBS systems, by their very nature, will serve not communities, or even states, but broad areas comprising as much as one-fourth to one-third of the country. This type of service is precisely the opposite of the localism which the Commission has struggled to assure for some 50 years.

It is not likely that DBS service will actually begin for three years or more. Further, since the DBS decision itself is subject to reconsideration and has been appealed, and also since the technical specifications of the service will not be determined until the 1983 Regional Administrative Radio Conference, it is at least conceivable, if not likely, that it could take longer than that. In any event, the policy ramifications of the decision may have immediate effects on regular broadcasters, if only because those policies may be applied in terrestrial as well as extraterrestrial contexts. BM/E

Telemetry Problems?

Many subcarrier and telco telemetry circuits are shakey, making telemetry return the weakest link in broadcasting. The Marti TSL-15 is solving these problems.

TSL-15

This link consists of a **15 watt** type accepted transmitter, a narrow band receiver and Yagi Antennas designed for 450-456 MHz. group P channels. This system will provide continuous-duty operation, and can handle data and voice in a 20Hz.-3000Hz. band. Test meters are provided on both transmitter and receiver. Automatic station identification is available and external DC operation is provided for.

MARTI **MARTI Electronics, Inc.**
1501 N. Main • P.O. Box 661
Cleburne, Texas 76031
(817) 645-9163 • Telex 794 835

Circle 235 on Reader Service Card

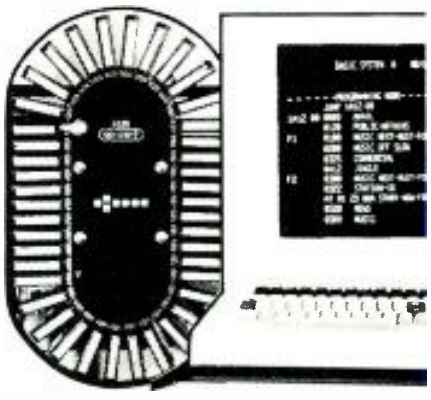
LOWEST PER CARTRIDGE COST* THE LATEST MICROPROCESSOR TECHNOLOGY

WHY WOULD YOU BUY ANYTHING BUT

IGM GO-CART

In 24, 42 or 78-cartridge* capacity

Use 2 or more Go-Carts for back to back play of all programming, including music
OR
Add one to your existing system to handle all the commercials, ID's, and public affairs, leaving the music on reels or disks. Easily interfaced to most automation systems, ours or "theirs".



FAST! Worst access time is 8 seconds.

HUMAN ENGINEERED. Whole unit swings open for maintenance, even while on air.

IGM COMMUNICATIONS

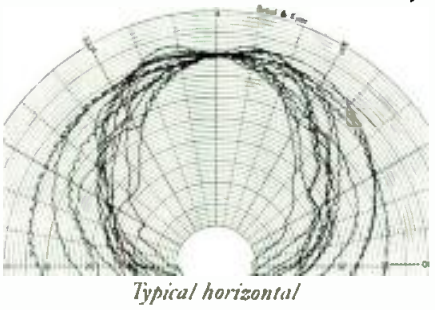
4041 HOME ROAD, BELLINGHAM, WA 98226 [206] 733-4567

Circle 236 on Reader Service Card

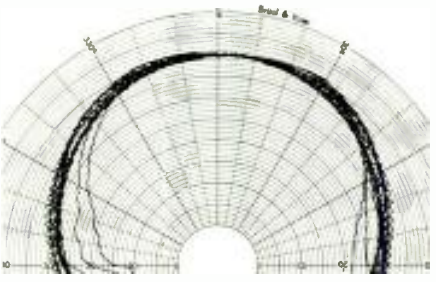
www.americanradiohistory.com

Before you invest in new studio monitors, consider all the angles.

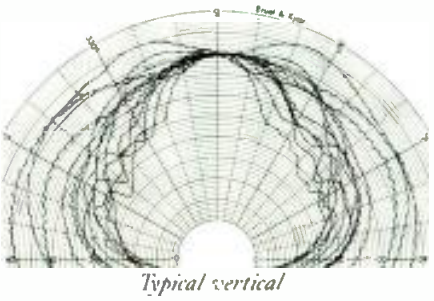
Polar response comparison of a typical two-way coaxial studio monitor and JBL's new 4430 Bi-Radial studio monitor from 1 kHz to 16 kHz.



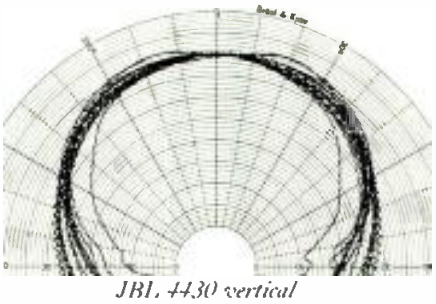
Typical horizontal



JBL 4430 horizontal



Typical vertical



JBL 4430 vertical

No one has to tell you how important flat frequency response is in a studio monitor. But if you judge a monitor's performance by its on-axis response curve, you're only getting part of the story.

Most conventional monitors tend to narrow their dispersion as frequency increases. So while their on-axis response may be flat, their off-axis response can roll off dramatically, literally locking you into the on-axis "sweet spot." Even worse, drastic changes in the horn's directivity contribute significantly to horn colorations.

Introducing the JBL Bi-Radial Studio Monitors.

At JBL, we've been investigating the relationship between on and off axis frequency response for several years. The result is a new generation of studio monitors that provide flat response over an exceptionally wide range of horizontal and vertical angles. The sweet spot and its traditional restrictions are essentially eliminated.

The key to this improved performance lies in the unique geometry of the monitors' Bi-Radial horn.[1] Developed with the aid of the latest computer design and analysis techniques, the horn provides constant coverage from its crossover point of 1000 Hz to beyond 16 kHz. The Bi-Radial compound flare configuration maintains precise control of the horn's wide 100° x 100° coverage angle.

1. Patent applied for.

And the Bi-Radial horn's performance advantages aren't limited to just beamwidth control. The horn's rapid flare rate, for instance, dramatically reduces second harmonic distortion and its shallow depth allows for optimal acoustic alignment of the drivers. This alignment lets the monitors fall well below the Blauert and Laws criteria for minimum audible time delay discrepancies.

But while the Bi-Radial horn offers outstanding performance, it's only part of the total package. The new monitors also incorporate JBL's most advanced high and low frequency transducers and dividing networks. Working together, these components provide exceptionally smooth response, high power capacity, extended bandwidth, and extremely low distortion.

Judge For Yourself

Of course, the only way to really judge a studio monitor is to listen for yourself. So before you invest in new monitors, ask your local JBL professional products dealer for a Bi-Radial monitor demonstration. And consider all the angles.

James B. Lansing Sound, Inc.
8500 Balboa Boulevard
P.O. Box 2200
Northridge, California 91329 U.S.A.

JBL Professional Products Division

JBL/harman international

Available in Canada through Gould Marketing, Montreal, Quebec

Circle 234 on Reader Service Card

www.americanradiohistory.com

AGFA U-MATIC
A NEW DIMENSION OF COLOR BRILLIANCE

Producers, engineers, performing artists—choose Agfa Professional Performance Videocassettes for one reason—they deliver. They deliver a new dimension of color brilliance and definition to your masters with 3dB more video signal-to-noise, 3dB more color signal-to-noise and 2dB more RF output. Drop-out rate is exceptionally and consistently low when compared to the industry standard.

In addition to superior video characteristics, Agfa U-Matic Cassettes feature a black anti-static backcoating which provides better tape transport and winding properties. Our proprietary formulation delivers unsurpassed durability in Agfa Videocassettes. Even with excessive editing, repeated playbacks and conditions unfit for other videocassettes, Agfa will perform flawlessly.

The Agfa cassette is precision molded and assembled under the most stringent and uncompromising quality control standards. It all adds up to unsurpassed professional mastering performance.

CASSETTE TYPE	PLAYING TIME
KCS 20 (Mini)	20 min.
KCA 30	30 min.
KCA 60	60 min.

AGFA VIDEO
MAGNETIC TAPE DIVISION

Agfa also offers High Color 1/2" VHS and Beta Videocassettes.

AGFA-GEVAERT, INC.
275 North Street, Teterboro, NJ 07608 • 201/288-4100

Circle 237 on Reader Service Card

www.americanradiohistory.com

TAX TIPS for stations

An Overlooked Tax Credit

By Mark E. Battersby
Financial Consultant

THE LATEST WORD out of Washington indicates that the Targeted Jobs Tax Credit will be extended beyond the end of this year. But is your broadcasting facility taking full advantage of this program that has created an estimated 900,000 jobs while saving employers over $200 million?

Tax credits now go to employers hiring Vietnam vets and ex-convicts, as well as the young, the poor, and the handicapped. Apparently, however, well over one-half of the people certified for the Targeted Jobs Tax Credit represented retroactive certifications. They had already been on the job for at least three weeks (many of them for several months) before the employer realized that they fit one of the categories of eligibility and applied.

The Economic Recovery Tax Act of 1981—in addition to liberalizing the Targeted Jobs Tax Credit and extending its life—has revised the requirements for certification of target-group employees. Now, certification must generally be received or requested in writing *before* employment begins. Failure to comply with the certification requirements automatically disqualifies the employee—and results in the loss of the credit.

Unfortunately, many broadcasters that have potentially qualified employees have (1) no procedures for identifying them before they are hired and (2) no familiarity with the certification process.

The Targeted Jobs Tax Credit (TJTC) is 50 percent of the first-year wages and 25 percent of the second-year wages paid to qualifying employees with a maximum credit of $3000 for the first year and $1500 for the second year. The total credit can directly offset up to 90 percent of the station's federal tax liability. Any excess credit can be carried back three years and carried forward 15 years.

In order to qualify for the program, individuals must be certified by the local Employment Security Division of the U.S. Department of Labor as being a member of one of the following targeted groups:

1) Handicapped individuals undergoing vocational rehabilitation.

2) Persons receiving Supplemental Security Income (SSI) at the time of employment.

3) Persons between the ages of 18 and 24 who are members of so-called "economically disadvantaged" families, as determined by household income for the six months prior to employment.

EMPLOYER SCREENING QUESTIONNAIRE

Our company may benefit from a tax credit for hiring certain employees. In order to determine if we can get this credit, the following questions need to be answered. This information will be used ONLY FOR DETERMINING WHETHER THE COMPANY IS ELIGIBLE FOR THE CREDIT AND WILL BE KEPT CONFIDENTIAL. Responses to these questions will not affect your employment with this company.

Date of application _____

NAME _____

SS# _____ Date of birth _____

1. VOCATIONAL REHABILITATION
Have you completed or are you receiving rehabilitative services for a physical or mental disability? _____ (Yes/No)

2. SUPPLEMENTAL SECURITY INCOME RECIPIENT
Have you received supplemental security income (SSI) benefits for any month ending within the last 60 days? _____ (Yes/No)
If yes, what was the most recent date on which you received benefits? _____

3. ECONOMICALLY DISADVANTAGED YOUTH
Are you at least 18 years of age but not yet age 25? _____ (Yes/No). If "Yes" complete the attached "Family Income Information" form.

4. ECONOMICALLY DISADVANTAGED VIETNAM-ERA VETERAN
Did you serve on active duty (other than for training) in the Armed Forces of the United States for more than 180 days, any part of which occurred in the Vietnam era (after August 4, 1964 and before May 8, 1975)? _____ (Yes/No)
If "Yes" complete the attached "Family Income Information" form.

5. ECONOMICALLY DISADVANTAGED EX-FELON
Have you been convicted of a felony or released from prison within the past five years? _____ (Yes/No)
If "Yes" complete the attached "Family Income Information" form.

6. CO-OP EDUCATION STUDENTS
a) Are you applying for this job as part of a formal co-op education program through your high school or vocational school? _____ (Yes/No)
b) Are you at least 16 years old but not yet 20 years old? _____ (Yes/No)
If "Yes" to both questions, complete the attached "Family Income Information" form.

7. GENERAL ASSISTANCE RECIPIENTS
Have you received aid under a general assistance program for at least the past 30 days? _____ (Yes/No)

8. "WIN" EMPLOYEES
Were you employed in a work incentive (WIN) program or eligible for financial assistance for at least the last 90 days under a WIN program? _____ (Yes/No)

9. CETA EMPLOYEES
Were you involuntarily terminated from a CETA job after December 31, 1980? _____ (Yes/No)

www.americanradiohistory.com

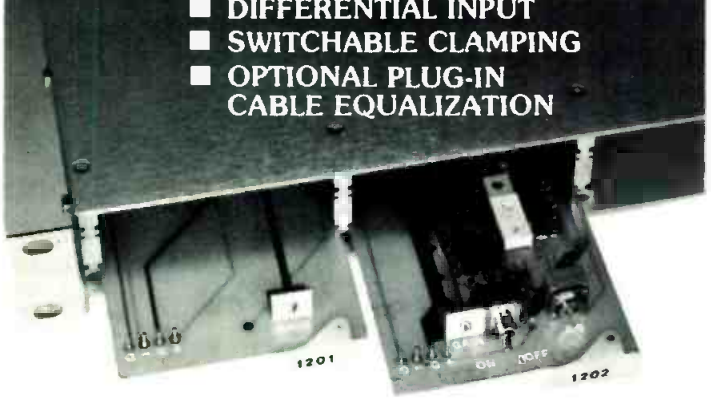
NOW! The Only Two DA's You Will Ever Need For Distributing Your Television Signals

The 1201 Versatile Distribution Amplifier

3 DA's in one. It's a
Video DA, Subcarrier DA, Pulse DA.

The 1202 Video Distribution Amplifier

Featuring:
- DIFFERENTIAL INPUT
- SWITCHABLE CLAMPING
- OPTIONAL PLUG-IN CABLE EQUALIZATION



GPS GRAHAM-PATTEN SYSTEMS, INC.
P. O. BOX 1960, GRASS VALLEY, CA 95945
(916) 273-8412

Circle 239 on Reader Service Card

BSM SYSTEMS

Audio Distribution Amplifier

- Transformer Input
- Transformer Outputs
- Front Panel Output Controls
- Shielded Power Supplies
- Isolated Outputs
- Plug In Boards
- Front Panel Supply Indicator
- State of the Art Design

BSM Systems Audio Distribution Amplifiers are high quality units available in mono or stereo versions. They provide excellent RF shielding and will solve a multitude of problems associated with Mass Audio Feeds.

For complete information on Audio DAs, Remote Broadcast Units, or our new Routing Switchers, write or call:

BSM SYSTEMS
BOX 8081 MANITO / SPOKANE, WASHINGTON 99203
(509) 448-0697

Circle 240 on Reader Service Card

TAX TIPS

FAMILY INCOME QUESTIONNAIRE

There is a possibility that by having you on our payroll our company can get a tax credit. In order to determine if we can get this credit, we need from you information about all income earned or received by all members of your household before you applied for employment with this company. Please complete this form and answer the questions to the best of your knowledge.

PART A

Applicant's Name _____

Address _____

City _____ State _____ ZIP _____

County of Residence _____ Date of Birth _____

PART B

Handicapped ___ YES ___ NO

CO-OP Education Student ___ YES ___ NO

SSI Recipient ___ YES ___ NO

Vietnam-era Veteran ___ YES ___ NO

General Assistance Recipient ___ YES ___ NO

Ex-Convict ___ YES ___ NO

"WIN" Employee ___ YES ___ NO

Ages 18-24 and "Economically Disadvantaged" ___ YES ___ NO

CETA Employee ___ YES ___ NO

PART C

Please complete this section to the best of your knowledge. If you do not know your household income for the past six months, show an estimate of weekly wages, etc.

Number in your household _____

FULL NAME	RELATIONSHIP	SS#	SOURCES OF INCOME	TOTAL INCOME PRIOR 6 MOS.
1.				
2.				
3.				

I certify that the information supplied in completing this form is true and correct to the best of my knowledge.

DATE _____ Signature _____

4) Vietnam-era veterans who are members of "economically disadvantaged" families.

5) "Economically disadvantaged" persons who have been convicted of a felony and are hired within five years after conviction or release from prison, rehabilitation facility, or similar institution.

6) High school or vocational school students between the ages of 16 and 20 who are members of "economically disadvantaged" families and who are actively enrolled in a cooperative education program.

7) Persons receiving assistance under a "qualified general assistance program" throughout the 30 days prior to starting employment.

8) Eligible work incentive (WIN) employees.

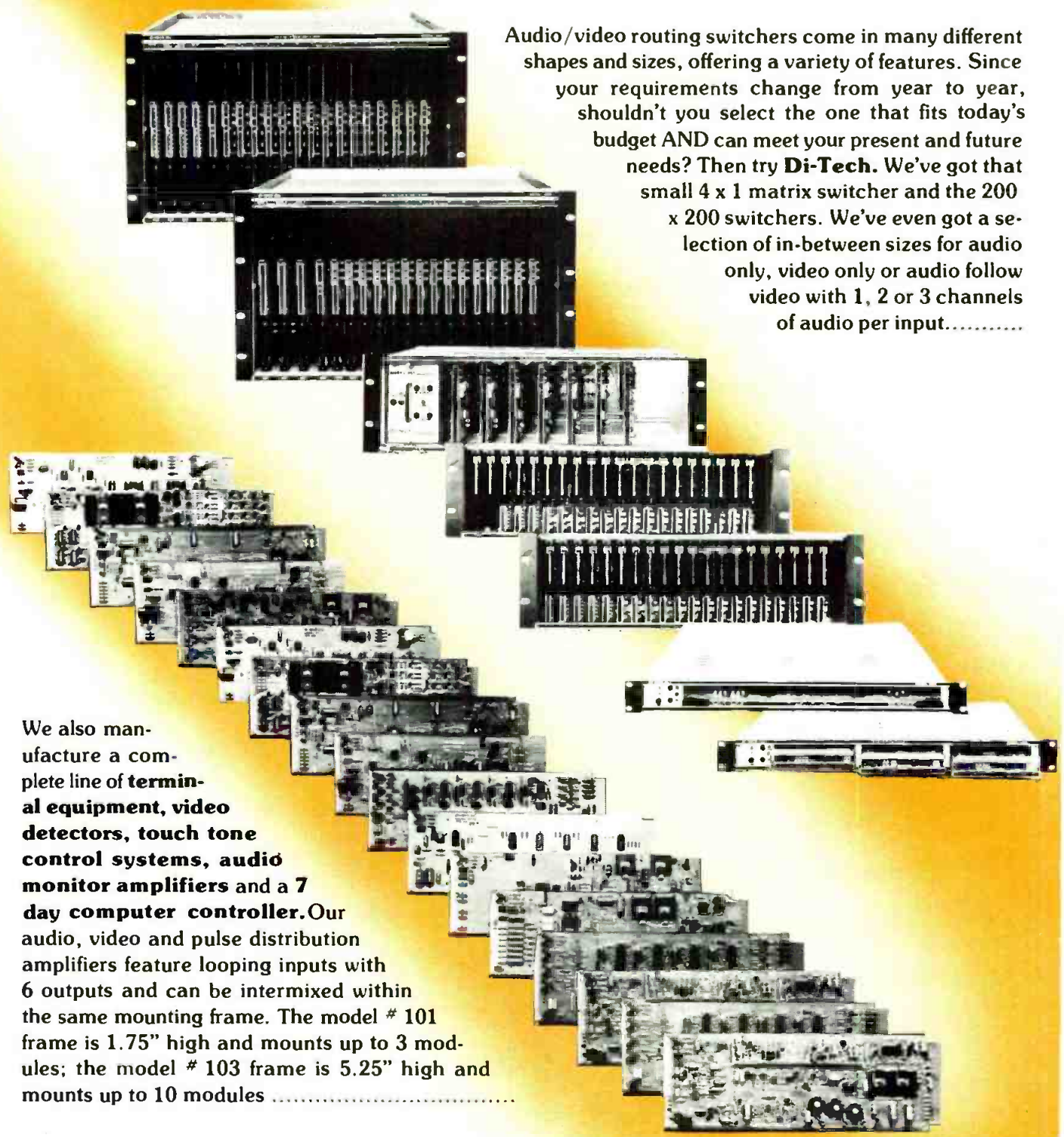
9) Persons involuntarily terminated from the CETA program after December 31, 1980.

The term "economically disadvantaged" means an annualized household income for the past six months of less than 70 percent of the Bureau of Labor statistics' lower standard of living for the area.

The easiest way to identify target-group members is to attach a short questionnaire to employment applications. Job applicants may not be forced to complete the questionnaire, however, and they should be informed that the questionnaire will not have any bearing on whether they are hired. The Equal Employment Opportunity Commission has ruled that it is legal to ask for the TJTC informa-

www.americanradiohistory.com

Imagine The Features That Will Answer Your Present And Future Needs ... Then Call **Di-Tech**



Audio/video routing switchers come in many different shapes and sizes, offering a variety of features. Since your requirements change from year to year, shouldn't you select the one that fits today's budget AND can meet your present and future needs? Then try **Di-Tech.** We've got that small 4 x 1 matrix switcher and the 200 x 200 switchers. We've even got a selection of in-between sizes for audio only, video only or audio follow video with 1, 2 or 3 channels of audio per input.....

We also manufacture a complete line of **terminal equipment, video detectors, touch tone control systems, audio monitor amplifiers** and a **7 day computer controller.** Our audio, video and pulse distribution amplifiers feature looping inputs with 6 outputs and can be intermixed within the same mounting frame. The model # 101 frame is 1.75" high and mounts up to 3 modules; the model # 103 frame is 5.25" high and mounts up to 10 modules .....

Whatever your present or future needs are, call **Di-Tech** for the high quality, reliable, easy-to-operate answer.

di-tech

our NEW, bigger location:
48 JEFRYN BOULEVARD
DEER PARK, N.Y. 11729
TEL. # (516) 667-6300

Circle 238 on Reader Service Card

www.americanradiohistory.com

Winsted
THE PERFECT MATCH
for your video equipment

SYSTEM/85
MODULAR
VIDEO
CONSOLES

MODEL
85-20

A new generation of professional modular systems, developed by Winsted for use with the Sony "800 and Type 5" series video equipment.

These rugged 19" EIA modular units offer easily assembled welded and bolted stability. Units assemble in any configuration to suit your needs. The basic module is expandable to any size system with add-on-units.

FOR FULL-LINE CATALOG of the most complete line of customized videoproduction equipment, call or write:

THE WINSTED CORPORATION
9801 James Circle • Minneapolis, MN 55431 • 612-888-1957

PHONE TOLL-FREE 1-800-328-2962

Circle 241 on Reader Service Card

FREE FREE FREE FREE

This and other New York City locations. Plus one-stop information, permits, and problem solving.
Nancy Littlefield, Director
MAYOR'S OFFICE OF FILM, THEATRE AND BROADCASTING
110 West 57th St.
New York, NY 10019
(212) 489-6710
A Division of the NYC Office of Economic Development

NEW YORK CITY PRODUCES

Circle 242 on Reader Service Card

TAX TIPS

REQUESTING CERTIFICATION

TJTC Certification Officer
[State] Employment Commission
P.O. Box [Number]
[City, State, ZIP]

Attention:

Gentlemen:

We are presently considering hiring the person(s) named below who may be eligible participant(s) in the Targeted Jobs Tax Credit. In accordance with state and federal tax laws, we submit this request that you formally establish the eligibility or ineligibility of this (these) person(s) as of the date(s) indicated:

	Name	Anticipated Date of Employment
1.		
2.		
3.		
4.		

It is our understanding that this letter fulfills our responsibility to file a timely request for employee certification. We look forward to hearing from you to arrange a convenient time for you to interview the prospective participants.

Sincerely,

tion so long as this information is not used, at any time, to discriminate.

A properly completed questionnaire (see illustration) may be reviewed by a prospective employer to determine if an applicant fits within one of the nine eligible groups. If so, a certification request (see illustration) should be submitted to the TJTC Certification Officer of the employer's local Employment Security Division.

To illustrate, Mike Smith, who lives in Chicago, applied for work with Jones Broadcasting and filled out a family income form showing wages of $3000 for Mike, $500 for his wife and $500 for his brother. In addition, Mike received $2400 of unemployment compensation and the family received $500 in food stamps. Since the unemployment compensation and the food stamps are not considered income for TJTC purposes, this leaves $4000 of income for the six-month period, which is $8000 annualized.

The chart of economic guidelines, obtained from the local Employment Security Division, shows that a family of four in Chicago with less than $9460 of income is "economically disadvantaged." Since Mike's family income is only $8000, Mike will qualify for the Targeted Jobs Tax Credit.

After receiving the certification request, the certifying official will contact the employer to arrange a time to come to the work location and spend 10 to 15 minutes with the employee to verify the information on the questionnaire. Ordinarily, no attempt is made to verify the information by phone calls to third parties, such as past employers.

However, since in most areas there is a long time lag for this procedure, it is best to start the process as early as possible so that the employer can protect its rights to the credit. And, best of all, there is no charge to the employer or to the employee, nor is there any penalty if the employee does not qualify. Finally, when the certifications are approved, the employer files Form 5884 with his annual income tax return in order to claim the Targeted Jobs Tax Credit. **BM/E**

www.americanradiohistory.com

Storeel is dedicated to conserving energy.

Yours.

Energy conservation is much in the news these days. Like the weather, many talk about it but few do anything about it. We haven't figured how to change the weather, but we do have several systems specifically engineered for broadcasters that both conserve energy and add efficiency. The very latest (shown installed) is called STOR-MAX.™

Save energy (yours) by converting your overcrowded film and VTR libraries to the new "Instant Access" high-density systems engineered and distributed only by Storeel. Modular Rapid Transit Storage™ maximizes units stored per square foot of floor space, minimizes retrieval time, optimizes energy efficiency.

Our many years of design and engineering pay off in solutions to your storage problems.

Call or write "The Railriders" at Storeel today for free estimate. No obligation, of course.

Illustrated catalog of Storeel's "confusion eliminators" available upon request. Write on your letterhead or telephone for your free copy.

STOREEL CORP. **The Space-Saving Engineers**

2050-C Carroll Avenue • Atlanta, Georgia 30341 • Telephone (404) 458-3280

Circle 243 on Reader Service Card

www.americanradiohistory.com

SAVE MONEY
CHECK OUR MONTHLY SPECIALS

Serving the industry Since 1922
World's largest franchised distributor of electronic tubes
Serving over 5,000 stations

FREE GIFTS
FIND OUT HOW TO QUALIFY PHONE OR WRITE

CeCo

BROADCAST TUBES

CeCo

WE WILL NOT BE UNDERSOLD

TRANSMITTING TUBES

3B28	$ 10.00
3CW20000A3	1400.00
3CW20000A7	1495.00
3CX1000A7	500.00
3CX1500A7	460.00
3CX2500A3	426.00
3CX2500F3	390.00
3CX3000A1	420.00
3CX3000A7	540.00
3CX3000F1	495.00
3CX3000F7	602.00
3CX10000A3	1062.00
3CX10000A7	1420.00
3CX15000A3	1350.00
3CX15000A7	1330.00
3CX20000A7	1855.00
3-400Z	82.00
3-500Z	88.00
4CV35000A	2165.00
4CX250B	55.00
4CX250BC	68.00
4CX250K	120.00
4CX250R	87.00
4CX300A	175.00
4CX350A	105.00
4CX350F	118.00
4CX1000A	365.00
4CX1000K	450.00
4CX1500A	579.00
4CX1500B	460.00
4CX3000A	862.00
4CX5000A	1018.00
4CX10000D	1175.00
4CX15000A	1400.00
4CX20000A	1475.00
4CX35000C	5520.00
4CX40000G	6722.00
4X150A	49.50
4X500A	320.00
4-65A	62.00
4-125A	70.00
4-250A	90.00
4-400A C	88.00
4-400AX	160.00
4-400B	110.00
4-500A	192.00
4-1000A	415.00
5CX1500A	620.00

TRANSMITTING TUBES

5-500A	225.00
575A	27.00
673.00	35.00
802	27.50
805	50.00
807	5.50
810	60.00
813	40.00
816	5.25
828	80.00
833A	80.00
866A	6.80
872A	15.50
889RA	1775.00
891R	2220.00
892R	2200.00
4055V I	105.00
5762	910.00
5879	4.00
5924A	795.00
5933	15.25
6076	540.00
6076A	625.00
6146A	7.25
6146B	7.50
6155	70.00
6156	70.00
6161	395.00
6166A(7007)	2220.00
6696A	2790.00
6697A	2900.00
ML7007A	3390.00
7237A	525.00
7527	110.00
7527A	160.00
8008	16.00
8122	82.00
8791VI	405.00
8792VI	725.00
8873	185.00
8874	185.00
8875	185.00
8890	2400.0
8891	3300.00
8916	3100.00
8985	1600.00
8986	1225.00

CAMERA TUBES

BC4390 series	$1820
BC4391 series	2140
BC4392 series	2270
BC4393R	2460
BC4394	2460
BC4532U	1325
BC4592 series	2195
BC4593R	2350
BC4594 series	2350
BC4809	720
BC4809B	720
BC4908 series	1875
BC4909	1955
BC4992 series	2280
BC4993R	2460
BC4994 series	2460
5820A L	3060
7295C	2835
7389C	2855
BC7735	240
BC8134	810
BC8134B	775
8480	1315
BC8480	1945
BC8507	270
BC8541	270

VIDICONS FOR CCTV

20PE11	26.25
20PE13A	26.25
20PE14	28.35
20PE19/S4097	28.35
20PE20/S4097A	28.35
4532U	285.00
7262A	30.35
7735A	30.85
7735B	165.00
8134	294.00
8507	150.00
8507A	245.00
8541	40.00
8541B	50.00
8758A	45.00
8823	30.00
8844	26.25
8929	30.00
S4075	279.50
S4076	318.50
S4092	299.00
S4102	305.00
S4113	344.00
S4119	403.00
S4140	403.00

AIR SYSTEM SOCKETS

SK-300	470.00
SK-300A	325.00
SK-310	380.00
SK-400	235.00
SK-410	32.00
SK-500	336.00
SK-510	32.50
SK-600	47.00
SK-600A	46.25
SK-602	68.00
SK-602A	72.00
SK-607	56.00
SK-610	52.00
SK-610A	60.00
SK-611	41.00
SK-612	72.00
SK-620A	59.00
SK-630A	61.00
SK-640	34.00
SK-650	35.00
SK-1300	319.00
SK-1310	336.00
SK-1320	366.00
SK-1400A	430.00
SK-1420	570.00
SK-1470A	555.00
SK-1490	522.00
SK-1500A	984.00
SK-1510A	1149.00
SK-1920	19.00
SK-2200	76.00
SK-2210	64.00
SK-2220	292.00
SK-655	36.00
SK-660	37.00
SK-660A	35.00
SK-700	216.00
SK-710	207.00
SK-711A	207.00
SK-712A	207.00
SK-740	72.00
SK-760	72.00
SK-761	72.00
SK-770	80.00
SK-800B	240.00
SK-810B	260.00
SK-820	565.00
SK-830A	540.00
SK-831	286.00
SK-840	340.00
SL-860	207.00

AIR SYSTEM SOCKETS

SK-890B	234.00
SK-900	283.00

CHIMNEYS

SK-3096	25.00
SK-316	25.00
SK-406	57.00
SK-416	27.00
SK-506	85.00
SK-516	105.00
SK-606	10.00
SK-626	10.00
SK-636B	29.00
SK-646	58.00
SK-656	58.00
SK-806	31.00
SK-816	27.00
SK-906	44.00
SK-1306	37.00
SK-1406	32.00
SK-1426	35.00
SK-2216	48.00

SOLID STATE REPLACEMENTS FOR VACUUM TUBE RECTIFIERS

ASSR-1010	575A	35.00
ASSR-1011	673	50.00
ASSR-1013	866A, 866AX, 3B28	9.00
ASSR-1014	872A, 872AX, 4B32	30.00
ASSR-1015	8008, 8008XE	35.00

RECEIVING TUBES
Complete lines of major brands at 75 to 80% off list.

SEMICONDUCTORS
Full lines of Sylvania (ECG), RCA (SK), and GE replacement semiconductors

Wholesale tube prices to broadcasters • One source for all your electronic needs • **Off the shelf, overnight delivery:** call 24 hrs. a day, 7 days a week, 1-800-221-0860. **POLICY STATEMENT: Terms:** Rated firms — Net 30 Days. **Others:** Furnish Trade References — 2% Discount if payment accompanies order. All shipments F.O.B. Brooklyn, usually within 24 hours of order. Emergency Shipments Our Specialty. All products carry Standard Factory Guarantee. All Prices Subject to Change Without Notice.

CeCo **COMMUNICATIONS, INC., 2115 Avenue X, Brooklyn, New York 11235**
Phone: (212) 646-6300 / Toll Free: (800) 221-0860
Telex: 235125 Cable: CeCo Tubes

Circle 244 on Reader Service Card

www.americanradiohistory.com

GREAT IDEA CONTEST

Here's a chance to share your own personal solutions to some of broadcasting's most vexing engineering needs . . . .

Each month, *BM/E* presents two engineering problems and invites you to submit solutions complete with diagrams. *BM/E's* editors will read the entries and select the best for publication—giving readers an opportunity to vote for the idea they consider best by using the ballot area on the Reader Service Card.

We will pay $10 for each entry printed. In addition, the solution in each month's competition receiving the most votes on our Reader Service Card will win $50.00. So put on your thinking cap and submit an answer to either of the problems outlined below . . . and be sure to watch this section for the solutions.

NEW, BIGGER PRIZE: $50.00 FOR EACH CONTEST WINNER!

Problem 11: Cart Automation

The station has three cart machines, bought at various times, so they are not equipped with automatic sequencing circuitry. Design an inexpensive relay and pushbutton system to: (1) Start the second cart when the first finishes; (2) Stop the first and start the second at the push of a button; and (3) Proceed similarly from second to third, and from third back to first, if a switch is set for that. Use the simplest cue tone or other end-of-tape system that will do the job.

Solutions to Problem 11 must be received by October 18, 1982, and will be printed in the December 1982 issue

Problem 12: Microphone Switching

In our typical combination control/interview room, the operator/interviewer needs fast control of four mics placed around the table and plugged into connectors on the front of the console. In some situations, the operator may want to open only one mic at a time. Design a simple pushbutton or other system for fast, easy switching of the mics without introducing switching noise into the on-air signal.

Solutions to Problem 12 must be received by November 16, 1982, and will be printed in the January, 1983 issue

CONTEST RULES

1. **How to Enter:** Submit your ideas on how to solve the problems, together with any schematic diagrams, photographs, or other supporting material. Entries should be roughly 500 words long. Mail the entries to *BM/E's* Great Ideas Contest, 295 Madison Avenue, New York, NY 10017. Use the official entry form or a separate piece of paper with your name, station or facility, address, and telephone number.
2. **Voting and Prizes:** *BM/E's* editors will read all entries and select some for publication; the decision of the editors is final. Those selected for publication will receive a $10 honorarium. Each month, readers will have an opportunity to vote for the solution they consider the best by using the Reader Service Card. *BM/E* will announce the solution receiving the most votes and will award the winner of each month's competition a $50.00 check.
3. **Eligibility:** All station and production facility personnel are eligible to enter solutions based on equipment already built or on ideas of how the problem should be solved. Consultants are welcome to submit ideas if they indicate at which facility the idea is in use. Manufacturers of equipment are not eligible to enter. Those submitting solutions are urged to think through their ideas carefully to be certain ideas conform to FCC specs and are in line with manufacturers' warranty guidelines.

Mail Official Entry Form to:

BM/E's Great Ideas Contest
295 Madison Avenue, New York, NY 10017

Solution to Problem # _____

Your Name: _____

Title: _____

Station or Facility: _____

Address: _____

_____

Telephone: (____) _____

I assert that, to the best of my knowledge, the idea submitted is original with this station or facility, and I hereby give *BM/E* permission to publish the material.

Signed _____

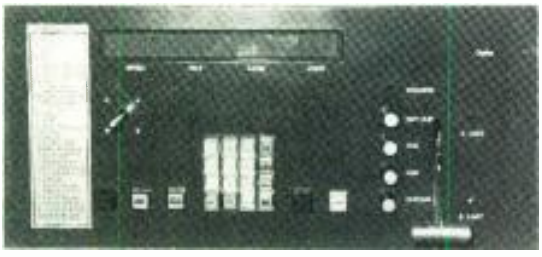
Date _____

www.americanradiohistory.com

SOLUTIONS to problem 8: Talk-show Call-in Indicator

For a call-in talk show, it is desirable to have a system that will put callers on hold until the call can be taken, and also indicate to the operator or host which call came in first. Here are two solutions to the problem.

Amazing high powered digital effects at a truly affordable price.*



*Under $25.000

- 70 nanosecond resolution
- Disk memory storage
- Over 200 pre-programmed effects
- Countless user-defined effects
- Easy to operate
- Manipulates shapes, logos, titles

DIGIFEX

Digifex digital special effects include slide, squeeze, rotate, infinite compression, zoom expansion, flip, spin, spiral, trail, double image, split image, matrix wipes and combinations of these. The Digifex is available as a stand alone unit OR as an add-on feature to a CHYRON IV graphics and titling system.

Digital Services Corp., 825 N.W. 13th St., Gainesville, Fla. 32601 • (904) 377-8013

Circle 245 on Reader Service Card

TVG RENTALS

LARGE SCREEN PROJECTION SYSTEMS
CHYRON IV

QUANTEL 5000 SP
SPECIAL DIGITAL EFFECTS
ADDA ESP—150C
PORTABLE DIGITAL STILL STORE SYSTEM

SONY BVU-800
1" TAPE & SLO-MO

EQUIPMENT TRUCK *with 220v and 110v hook up with built in Stableline. Two air conditioners, heater and video hook-up.*

TELEVISION GRAPHICS
555 BROAD ST., GLEN ROCK, N.J. 07452 — (201) 444-2911

Circle 255 on Reader Service Card

When accuracy Counts...Count on Belar for AM/FM/TV MONITORS

BELAR
AM MODULATION MONITOR

BELAR CALL ARNO MEYER (215) 687-5550
ELECTRONICS LABORATORY, INC.
LANCASTER AVENUE AT DORSET, DEVON, PA. 19333 • BOX 826 • (215) 687-5550

Circle 256 on Reader Service Card

CAUTION

A reader, John C. Mans of KYIN-TV, Osage, IA, has expressed concern that solutions to this month's Great Ideas problem may violate FCC rules requiring all user-furnished equipment hooked into phone company lines to be FCC type-accepted and registered, with connections made through a standard telephone company jack. Mans writes:

"For all practical purposes, this makes it impossible for any sort of homemade device to be used in conjunction with the regular telephone system. The technical requirements of Part 68 and the paperwork required to obtain FCC registration are quite extensive. I believe this will preclude a legal solution to problem 8 unless the phone company in the specific locality can provide a proper interface to isolate the call-in indicator from its lines."

Cooperation from the telco is not an impossibility, as Solution A points out. *BM/E* urges its readers to steer clear of FCC rule violations in implementing these or other Great Ideas.

SOLUTION A

William Howe, Chief Engineer
WEIV, Ithaca, NY

This system has been operating in our studios at WEIV for over a year and takes advantage of our telephone system, which is equipped with a built-in intercom and touch-tone dialing. The calls are answered by the receptionist, who keeps track of the order in which they were received. The signal device shown in the schematic is connected into the intercom speaker circuit of the telephone and decodes the touch-tones for 1, 2, 3, and *. As soon as the host takes a call, the receptionist signals the next call to be taken. To do this she first rings the intercom of the telephone to which the system is connected and then pushes either 1, 2, or 3 to indicate on which line the next call is to be taken. The intercom does not have to be answered as the signal operates from the paging speaker of the telephone. Ringing a new number automatically clears the previous number. The * is used to clear numbers without signalling a new number; any individual signal may be cleared with a manual button located next to the signal light. This system has the advantage of being able to operate from any location in the building where there is a telephone. This is a great help when someone other than the receptionist has to take over the calls. The greatest disadvantage is that it requires connection to the telephone. For this reason, I strongly recommend that you

www.americanradiohistory.com

Great announcer mics should be heard and not seen.

You won't see the MCE 5, but you will hear the rich full frequency sound that tells you it's a Beyer. Now the top quality and reliability for which Beyer is famous has been packaged into the world's smallest broadcast microphone – the MCE 5 – the announcer's mic.

The MCE 5 is an omni-directional electret condenser microphone with 20Hz-20kHz ± 3dB frequency response, 62dB signal-to-noise ratio and a maximum rated SPL at 1kHz of 116dB. Its matte black finish will not reflect light, so it goes unnoticed on camera. And Beyer's unique floating element eliminates pick-up of clothes rustle and body movement. Wind and air noises are reduced by up to 20dB, with the (removable) windscreen. You get only the announcer's voice.

Unlike conventional mini mics that are subject to breakdown from temperature and humidity, the MCE 5 is specially designed to withstand the elements.

The Beyer MCE 5 is available in a variety of configurations and connectors including: balanced, unbalanced, XLR, ¼-inch and open end; as well as phantom and self-powered with its own battery.

You may not find the Beyer MCE 5 on our announcer, but you'll find it at your local Beyer dealer, today.

Beyer Dynamic

BEYER DYNAMIC, INC.
5-05 Burns Avenue, Hicksville, NY 11801
(516) 935-8000 • In Canada, H. Roy Gray, Ltd.

Circle 247 on Reader Service Card

www.americanradiohistory.com

The brightness you need to show it big

General Electric Professional Large Screen Video Projection

With General Electric's exclusive sealed light valve and sealed Xenon lamp system, in both color and monochrome General Electric Professional Large Screen Video Projectors, you can depend on sharp pictures from 2 to 25 feet wide. New high brightness models allow the room lighting viewers need to take notes and refer to written material.

The color projectors reproduce every color accurately, with the convenience of inherent color registration. General Electric's exclusive single gun, single optical path light valve system eliminates the need for manual color convergence.

Portable and flexible, the projectors are being used for a wide variety of applications, including front and rear projection. Our applications experts will tell you whether yours can be added to the growing list, which includes:

Education: Medical, dental, engineering, computer science instruction.

Business: Sales meetings, industrial training, product presentations, real-time display of computer-generated data, teleconferences.

Aerospace and Defense: Situation displays, simulator training.

Entertainment: Theatre television, closed-circuit TV events, overflow crowds, special effects.

Television Production: Backgrounds for news programs, special effects, data display, program previewing.

Call or write: General Electric Company, Video Display Equipment Operation, Electronics Park 6-206, Syracuse, NY 13221. Phone: (315) 456-2152.

NEWS BACKGROUND at WTMJ-TV, Milwaukee, is displayed rear screen by General Electric projector.

SELL-OUT CROWDS at Fiske Planetarium, Boulder, watched live NASA transmission presented by General Electric projector.

GE Professional Large Screen Television Projector Specifications

Model	Light Output in Lumens			Resolution* in TV Lines per Picture Height		Input Power Req.		Scan Standards***	Video Input**
	Open Gate, Min.	Modulated TV, Min.	Modulated TV, Typ.	Min. Horiz.	Min. Vert.	Watts	Volt-Amps.		
COLOR PROJECTORS									
PJ 5000	550	220	280	750	300	1200	1600	525 li./60 fps; 625 li./50 fps	(1)
PJ 5050	1250	500	650	750	300	1600	2150	525 li./60 fps; 625 li./50 fps	(1)
PJ 5800	550	200	280	750	600	1200	1600	875 lines, 60 fps	(2)
PJ 5850	1250	500	650	750	600	1600	2150	875 lines, 60 fps	(2)
PJ 5100	550	200	280	750	650	1200	1600	1023 lines, 60 fps	(2)
PJ 5150	1250	500	650	750	650	1600	2150	1023 lines, 60 fps	(2)
MONOCHROME PROJECTORS									
PJ 7000	1000	600	750	800	400	1000	1350	525 li./60 fps; 625 li./50 fps	(3)
PJ 7050	1700	1000	1250	800	400	1000	1350	525 li./60 fps; 625 li./50 fps	(3)
PJ 7055	3300	2000	2400	800	400	1500	2000	525 li./60 fps; 625 li./50 fps	(3)
PJ 7800	1000	600	750	800	650	1000	1350	875 lines, 60 fps	(3)
PJ 7850	1700	1000	1250	800	650	1000	1350	875 lines, 60 fps	(3)
PJ 7855	3300	2000	2400	800	650	1500	2000	875 lines, 60 fps	(3)
PJ 7100	1000	600	750	800	750	1000	1350	1023 lines, 60 fps	(3)
PJ 7150	1700	1000	1250	800	750	1000	1350	1023 lines, 60 fps	(3)
PJ 7155	3300	2000	2400	800	750	1500	2000	1023 lines, 60 fps	(3)

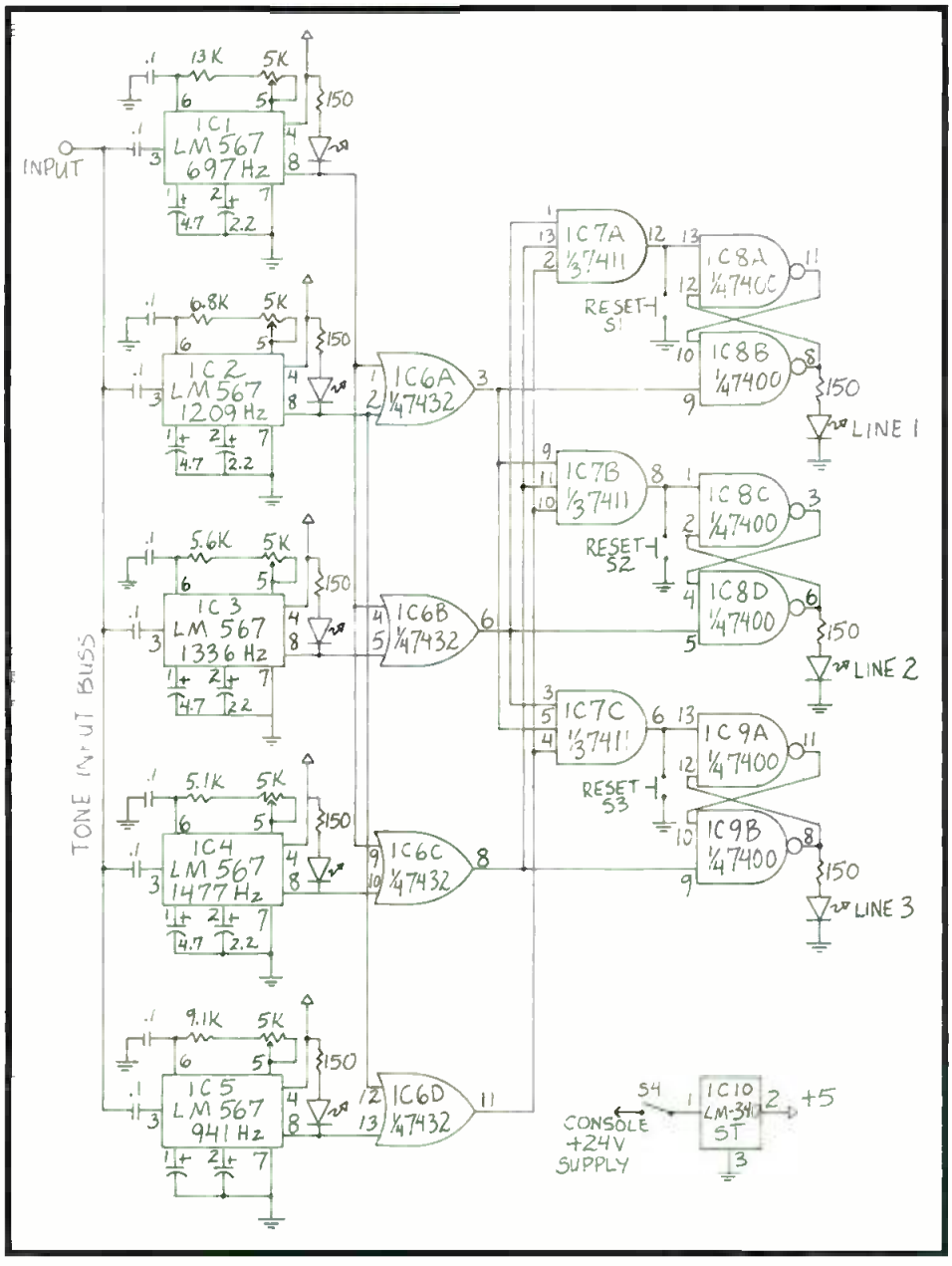
Line Power. All Projectors: 117 or 240 v., ± 10%, 50/60 Hz
*Resolution measurements made with wide-band video input.
**Video Input Key: (1) NTSC or RGB. (2) RGB. (3) Wide-Band.
***For use at other scanning rates, contact General Electric (VDEO) for special application/model information.

GENERAL ELECTRIC

Circle 248 on Reader Service Card

Ad 31

www.americanradiohistory.com



try to get approval from the phone company that serves you if the equipment is supplied by them before attempting this system. It goes a long way with getting along with Ma Bell, and in our case it wasn't as hard to get permission as I had expected.

IC1 through IC5 are the decoders for the five tones encountered in the numbers we use. This can easily be expanded to cover more numbers if necessary by adding more decoders and combiner gates. The 5K trim pot on each decoder is adjusted to give a low at pin 8 when a tone of the frequency is present on the input bus. The LED at pin 8 is optional to the operation of the circuit but is very handy in setting up the decoders. Frequency can also be adjusted by connecting a counter to pin 5 and adjusting the trim pot for a count of the desired frequency—just be careful that the counter does not load down the circuit. I usually use a 10K resistor in series with the counter to reduce loading. IC6 combines two decoders to give a low when the proper two tones are present on the input bus. IC6A goes low for 1, IC6B for 2, IC6C for 3, and IC6D for *. IC8 and IC9 are flip-flops that turn on the indicator LEDs for line 1, 2, or 3. IC7 turns off the previous LED when a new call is signaled or clears all call signals when the * is used. Reset buttons turn off only the LED of that line signal. Since this circuit was housed in our studio console, it was run off its 24 V power supply. This was connected to the input of IC10, a 5 V voltage regulator, through an off-on switch.

If your telephone system does not have both intercom and touch-tones or it is not desirable to use the telephone

VOTE NOW!
BALLOT ON READER SERVICE CARD

CDE CORNELL-DUBILIER
Transmitting Mica Capacitors

STOCK DELIVERY ON MOST RATINGS
ITT JENNINGS VACUUM CAPACITORS
SURCOM ASSOCIATES
305 Wisconsin Avenue
Oceanside, California 92054
(714) 722-6162
Circle 249 on Reader Service Card

NEW! Book
VIDEOTAPE EDITING
Videotape Editing-Communications With Pictures And Sound answers every videotape editing question: When to edit? When to (and when not to) use a dissolve or wipe? How to cut? How to use complex sync role editing and audio sweetening? How to affect the mood and pace of a show? Why and how to perform computer editing without losing creative control? It even takes the mystery out of time code and user bits.
Beginning editors, experience pros, film editors, and media managers will all appreciate Videotape Editing. This new book is your guide through the world of computer assisted videotape editing.
Videotape Editing-Communications With Pictures And Sound By Michael D. Sheffer
• 165 pp • 144 illus. • 6"X9" • Hardbound
$32.20 ($34.00 in IL)
Order Today!
Brochure Available
(312) 364-1900 Ext. 825
Major Credit Cards Accepted
SE Swiderski Electronics Inc.
Audio Video Engineers
1200 Greenleaf Ave • • Elk Grove Village IL 60007

www.americanradiohistory.com

CHIEF ENGINEER

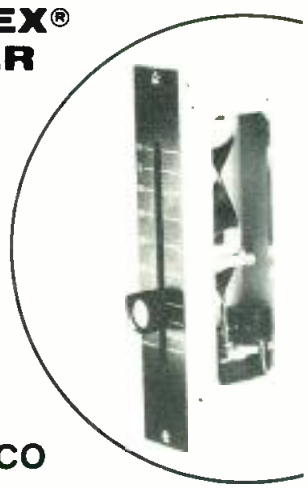
Convergence Corporation, a leading manufacturer of video tape editing equipment, located in Orange County, has an immediate opening for a talented individual with a strong, state-of-the-art, microprocessor design background. Familiarity with software is essential and some management skills are required. Experience in the video tape editing field is preferred. Experience in video and analog design is desirable. This key position requires 10-15 years experience and will report directly to the V.P. of Engineering.

If you are a qualified candidate seeking a challenging and demanding position in an expanding company, please submit your resume in confidence to the Personnel Department.

CONVERGENCE CORPORATION

1641 McGaw, Irvine 92714

PATENTED SLIDEX® FADER



NOW FROM SHALLCO

Exclusive Spiralinear construction provides smooth action and sealed element free from noise and maintenance. Call or send for spec sheet with complete data.

SHALLCO, INC.
P.O. BOX 1089
SMITHFIELD, N.C. 27577
919/934-3135

® Trademark of ADM

Circle 250 on Reader Service Card

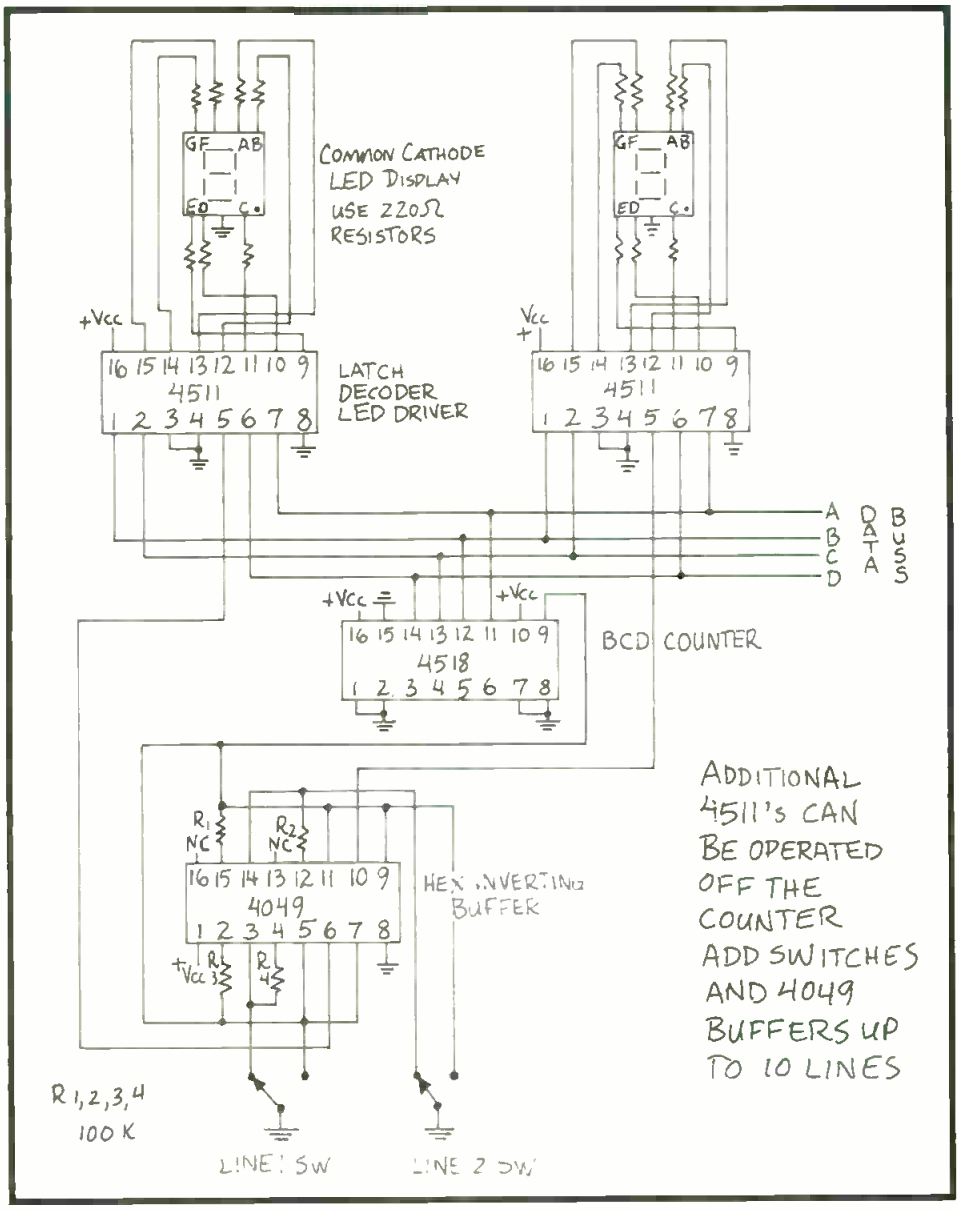
GREAT IDEAS

system, touch-tone generators can be built easily with chips that perform that function. The ones that I am aware of are the MC-14410, MK 5058, and MM53125. They require the addition of keypad, crystal, power supply, and a few resistors or capacitors according to their spec sheets. Your local Radio Shack should have a module complete with switch pad and MM53125 chip (RS 277-1010). This unit requires only the addition of a 3.579545 MHz TV color crystal and power supply to make it operational. It will not give you the mobility of the telephone system, but it only needs one line from the receptionist to the studio.

SOLUTION B

Jan A. Lipski, Chief Engineer
KIQO, Atascadero, CA

Line switches correspond to each incoming line and should be remotely located at the receptionist area. IC 4049 acts as a bounceless switch with two outputs. One goes to the counter, advancing the count by one. The second output goes to the decoder latch for the corresponding line, taking the count from the data bus and displaying the number. The counter automatically recycles to 0 from 9, allowing up to 10 lines to be identified. Power supply should provide between +5 to 15 V.



CONTEST WINNER

problem 3: Elapsed Time Indicator

Congratulations to Mike Wilson, Videotape Maintenance Engineer, NBC-TV, Burbank, CA for his winning solution A (see pages 125 and 126 of the April 1982 issue), which has won Wilson $50.

www.americanradiohistory.com

BM/E's ENG/EFP/EPP HANDBOOK

HE MOST AUTHORITATIVE, COMPREHENSIVE GUIDE TO THE TECHNOLOGY AND TECHNIQUES OF THE 80'S.

HE DEFINITIVE SOURCE for video uipment evaluation selection and acquisition. blished by BM/E — Broadcast Management/ gineering, this guidebook is designed to be the horitative text on the entire subject of electronic rnalism, field production and post-production in 80's. A primer for newcomers, and advanced ort for professionals, the Handbook is organized allow you to select the proper equipment for any eration — from the simplest to the st complex — and plan for pansion as your produc- n requirements grow.

ACTUAL. In 570 t-filled pages, liberally il- trated with photos, dia- ms and charts, the Hand- ok offers detailed analysis existing equipment and stems, probing strengths d shortcomings of current oduct design and covering y parameters for product mparison. It offers guidance in g range organization and systems planning, as ll as predictions about emerging technology and nds. Authored by C. Robert Paulson, this video oduction handbook is written in an informal style t satisfies the needs of both the technical and n-technical reader.

SSENTIAL. With constant changes in hnology and the proliferation of products, there no "simple" purchasing decisions in the ENG/EFP/EPP market. With each buying decision impacting on plans for the future, you need all the help and advice you can get. Now. Whether you're technical or non-technical, operations or management, this book is your required reference for coping with the "digital decade," for assuring productivity and profitability in your operations, now and in the future.

CONTENTS

Part I — Overview
Chapter 1. What's Happening in TV Communication
Chapter 2. Communication System Organization
Chapter 3. Trends in Communication Systems

Part II — Electronic Field Production
Chapter 4. Cameras, Lenses and Lighting
Chapter 5. Video and Audio Recorders
Chapter 6. Field System Accessories
Chapter 7. Planning & Acquiring ENG/EFP Systems

Part III — Electronic Post-Production
Chapter 8. Editing Systems and Controllers
Chapter 9. Video Signal Processing — Switchers
Chapter 10. Video Signal Processing — TBC's/Quantels
Chapter 11. Audio Signal Processing — Studio Audio/PCM/etc.
Chapter 12. EPP System Accessories
Chapter 13. Planning & Acquiring EPP Products

Appendices
A. Public Policy & Technological Developments
B. TV Standards
C. Bibliography & Reference Section

ORDER NOW. LIMITED EDITION.

ASE SEND _____ COPIES OF BM/E's ENG/EFP/EPP HANDBOOK @ 39.95 EACH.
HECK ACCOMPANIES ORDER, PUBLISHER PAYS POSTAGE AND HANDLING.

CHECK ENCLOSED $ _____
CHARGE TO MY — BANKAMERICARD VISA — MASTERCARD
_____
P. DATE _____

NAME _____
TITLE _____
COMPANY _____
CITY _____ STATE _____ ZIP _____

Make check payable to Broadcast Management/Engineering

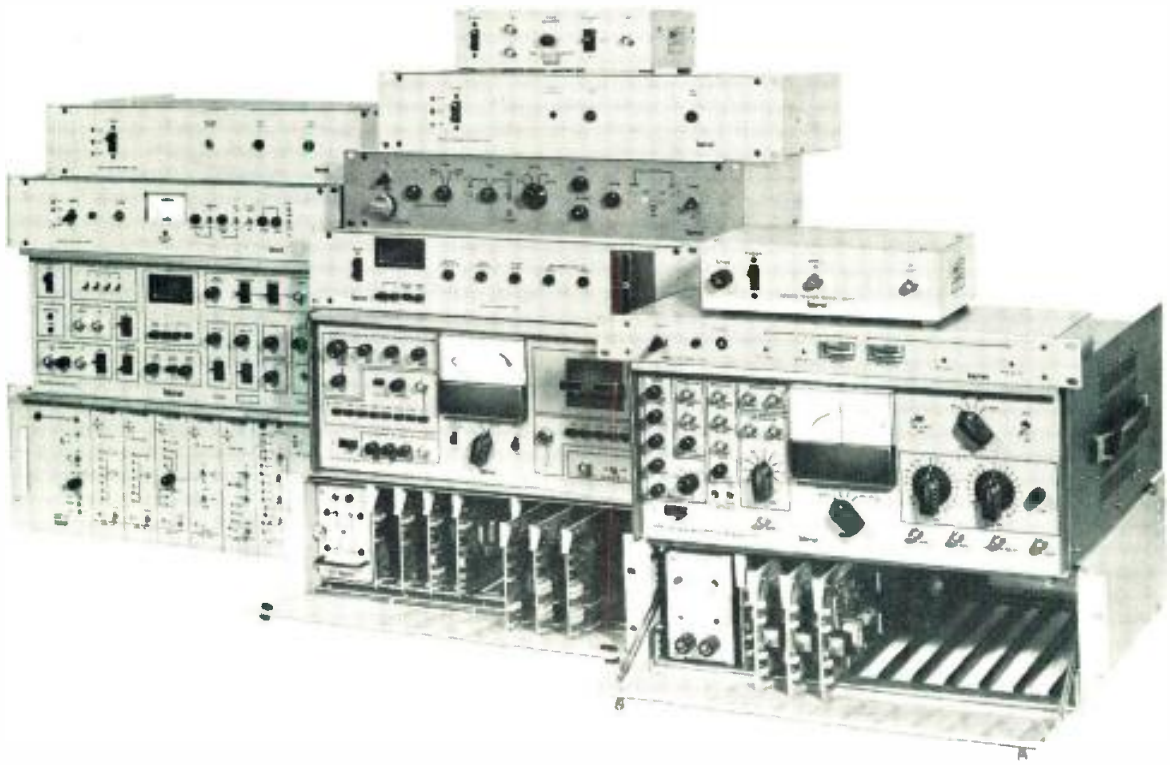
NY State Residents add 8% sales tax

BM/E — 295 Madison Avenue, New York, N.Y. 10017

www.americanradiohistory.com

Telemet

Video Broadcast and Test Equipment



AV Routing Switcher, 7934 is the latest in the state of the art circuitry. Both manual or computer control options available.

Envelope Delay Measurement Set, 3705 measures the envelope delay of video frequencies for compliance with FCC requirements.

Sideband Analyzer, 3706 shows with a calibrated response curve if sideband attennuation and frequency response meet FCC requirements. (model 3709, for deeper resolution and spectrum analysis).

Broadcast Demodulator, 4501 accurately demodulates the transmitted signal to show the true video signal being broadcast.

Demod Tester, 4503-A1 quickly checks the broadcast signal demodulator for flatness of frequency response.

Modulator, 4420 is a state of the art cable TV modulator with VSB saw filter, digital display, very low noise and FCC TV transmitter specs.

Broadcast Demodulator, 3710 is a comprehensive demodulator with both synchronous and envelope detection, built-in self tester, digital display, multiplexed outputs and other convenience features.

Video and Pulse Distribution System, (3300 series). Features Video DA's with frequency equalization; Pulse DA's with variable delay.

Clamper Amplifier, 3203-F clamps high levels of hum on balanced and unbalanced lines. Equalizes for cable loss up to 10 dB.

Fiber Optics Video Transmission System, 4210 has audio subcarrier. Provides interference-free video and aural transmissions for STL and ENG applications.

Modular Test Set, 3538 provides up to 8 EIA standard video test signals. Special purpose modules also available.

Audio DA System, 6910. Each DA card provides 6 balanced, or 12 unbalanced 600 ohm outputs. 10 cards per frame with power supply.

NTSC Chroma Keyer Decoder, 4706-A1 decodes the NTSC signal with no apparent H delay for RGB keying.

Isolation Amplifier, 5300. An active device that negates hum caused by ground loops on unbalanced video transmission cable.

Over 175 products and accessories available

Telemet

A Geotel Company

185 Dixon Avenue, Amityville, L.I., New York 11701 (516) 842-2300 TWX 510-227-9850

Eastern Area Office—(914) 279-3231

Circle 252 on Reader Service Card

www.americanradiohistory.com

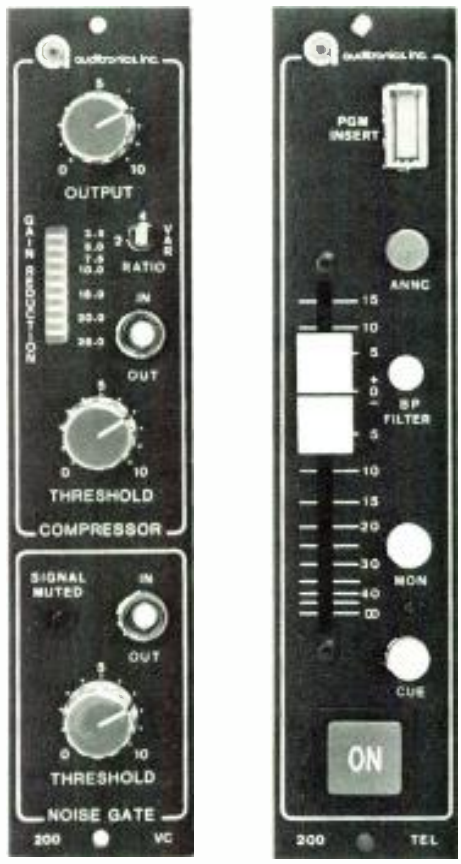
broadcast EQUIPMENT

New console modules from Auditronics 275

Two new accessories are now available for the Auditronics 200 Series on-air broadcast consoles. The 200-VC is a voice controller, and the 200 TEL is a telephone interface module.

The 200-VC voice controller provides independently controlled noise gate and compressor/limiter functions. It is capable of being used with either a mono mic or a stereo line source. This unit also provides user-accessible compression ratio, threshold, and output level controls as well as a built-in gain reduction indicator. Internal adjustments are provided for independent pre-sets of attack and release times for both the noise gate and compressor/limiter sections.

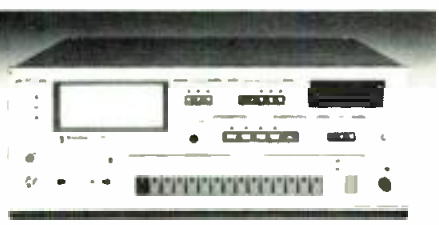
The 200-TEL telephone interface module allows telco line interface via any commercially available hybrid without affecting other functions. In addition to providing incoming bandpass filtering and level control, local announcer mic switching, mix-minus capability, and cue and monitor feeds, the 200-TEL includes a stereo line level output for tape recorder feed. The 200-VC is $450.00, and the 200-TEL is $500.00.



Automatic Distortion Analyzer from Asaca 276

The new Asaca/Shibasoku 725 automatic distortion analyzer comes with built-in microprocessor allowing the user to perform harmonic analysis of audio signals. Individual harmonics are separated by digital methods and are measurable down to .0001 percent over a frequency range of 5 Hz to 500 kHz and down to 30 microvolts.

An analysis circuit measures THD covering the second to the tenth harmonics and provides for individual analysis through the fifth harmonics. Additional new circuits have been designed for impedance conversion and noise reduction. Automatic operation is possible by use of the microprocessor and the unit can be remote controlled.



Minolta Offers TV Color Analyzer 277

This new color analyzer enables engineers to execute objective white balance adjustment. The new computerized unit can take quick measurements off any standard monitor regardless of phosphor characteristics.

In addition to the primary analyzer mode for red, green, and blue beam intensities, the Color Analyzer II features a chroma mode that shows x-y coordinates and luminance in either candelas or foot lamberts. In this chroma mode, white standard or reference colors can be put into memory by adjusting the monitor until desired coordinates are displayed. The new unit has four white standard/reference color memory channels and four matrix characteristic memory channels.

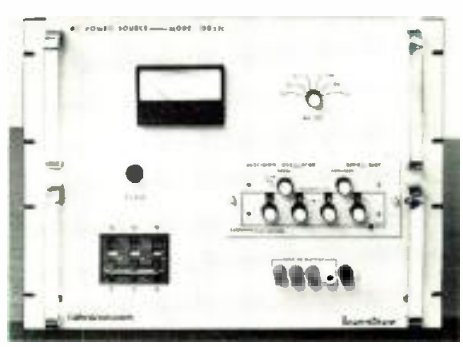
■ FOR MORE INFORMATION ■
circle bold face numbers on reader service card

Mini-TP from Western Group 278

Western Group/Optical Division has introduced its new Mini-TP, a portable optical alignment instrument for on-location registration and camera adjustment. The instrument attaches to most ENG/EFP lenses via adapters and presents an infinity target in a six-inch long device. It can set over 14 lenses to camera parameters. It also detects lens abnormalities.

Test Calibration from California Instruments 279

The line of Invertron ac power sources for studio applications offers pure sine wave output with variable voltage and



www.americanradiohistory.com

frequency. Output power ratings range from 100 VA single phase to 36 kVA polyphase. The units can also be manual or programmable.

The power source is a high power linear amplifier driven by an oscillator. The precision power amp consists of an ac to dc power supply and a multistate amplifier with a multisection output transformer. The output frequency is determined by a plug-in oscillator.

Fluid head and tripod from Bogen 280

The Bogen Mini Fluid Head and 3040 Tripod combination is suitable for cameras weighing up to nine lbs. The head pans over a full 360 degrees with a camera platform measuring 2¾ x 3 inches, and a handle that can be separated into two individual nine-inch segments. Vertical drag is continuously adjustable. The tripod is double braced aluminum with a two-section design extending to a full 73 inches with a 19-inch geared center post.

Fluke offers new multimeter 281

Fluke's latest entry into the digital multimeter market is the 8060A. It is a hand-held, 4½-digit unit that uses a four-bit microcomputer coupled with a Fluke CMOS LSI. It features true rms measurements for ac signals to 100 Hz, frequency to 200 kHz, and resistance measurements to 300 megohms. It also has the ability to store any measurement as a positive or negative relative reference value. Voltage is displayed in dBm, referenced to 600 ohms or in relative dB. Continuity testing, conductance, and constant current source diode testing functions are also included.

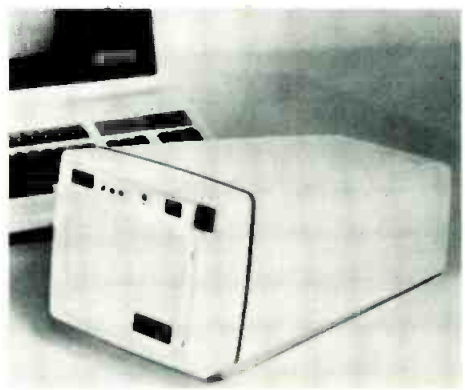
VAC Intercom Coupler 282

The Model PLC-1 from Video Aids of Colorado is a universal intercom coupler circuit. Used as an active hybrid bridge arrangement, the PLC-1 allows built-in camera/CCU intercom systems to be extended by up to 10 additional stations.

The new unit is an intercom station itself and is wired as another remote, taking its power from the existing PL system. The circuitry is transformer coupled to isolate the PL system from the outside intercom, avoiding ground loop problems. The new unit sells for $100.00.

Computer Graphics Device from Celtic Technology 283

This new photo system, the VFR-2000, is designed to capture CRT color graphics on film. It is a 35mm slide producing system which provides computer graphics users with the ability to quickly and automatically produce either a 35mm slide or an instant photographic print. It connects in the same loop as the CRT monitor by cables with standard BNC connectors.



Features of the unit are automatic film advance, film rewind, and remote operation. The unit sells for approximately $2000.00 and is compatible with over 20 major graphics systems.

New cartridge from Singer 284

The new Astatic MF cartridge offers a transducing system that combines features of the moving magnet, variable reluctance, and moving coil cartridges. The moving flux cartridges use a tiny magnet at the end of a stylus/cantilever tube, positioned in the cartridge body adjacent to a divided coil assembly. Only the component magnet, where its flux intersects the coils, is allowed to be detected as output voltage. Four Astatic MF cartridges are available with a frequency response of 10 to 40,000 Hz, inductance of 90 mH, and a tracking force of 1 to 2 grams.

JVC's Portable Parts 285

Electronic replacement parts for the KY-2700 camera are being offered by JVC in three different kits. There is a master set of printed circuit boards, a set of integrated circuits, and a set of semiconductors. The circuit boards kit requires no tools to install, making it convenient for field replacement. The ICs and semiconductors require soldering. The kits come in an attache case designed especially for storage and transport of the parts.

■ FOR MORE INFORMATION ■

circle bold face numbers on reader service card

Global Specialties Scope Multiplexer 286

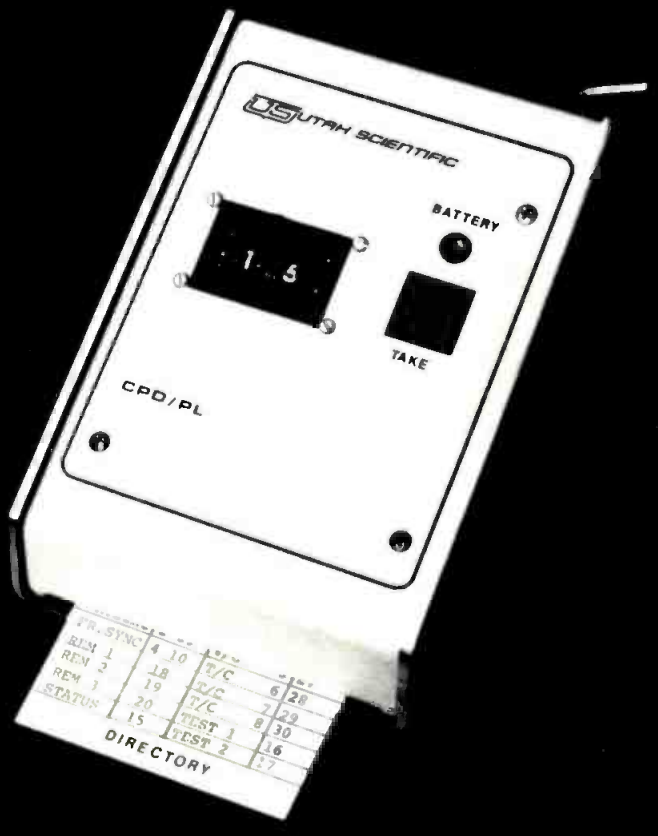
The new 8001 oscilloscope multiplexer is an add-on unit that will extend a standard one or two channel oscilloscope to eight channels, permiting direct comparison of events. Input is via eight BNC connectors and it will accept signals of ± 5 volts with a frequency response flat to 12 MHz, -3 dB at 20 MHz. Input impedance is one Megohm.

All eight channels can be viewed at once, or one of two four-channel combinations is possible. The operator can

www.americanradiohistory.com

TIRED OF PATCHING FEEDS TO THE GM'S OFFICE?

(OR TO OTHER OFFICES, CLIENT VIEWING ROOMS, EDIT SUITES, ETC.?)



Give them one of these Utah Scientific Routing Switcher Controllers and let them do their own patching.

Utah Scientific's new CPD/PL control is a Party Line panel with a single coax control connection — no bulky cables to install. It is powered by a transistor radio battery providing many years life expectancy. It features a pull-out directory to aid the operator in source selection.

Since multiple CPD/PL's can all be connected to a single party line, many stations are installing coax drops throughout their plants giving them complete flexibility for present and future routing switcher control using these versatile panels.

SINGLE COAX CONNECTION — BATTERY POWERED — UNOBTRUSIVE

TRY THAT ON YOUR GRASCOMFERNSAMDYNATEK SWITCHER!

UTAH SCIENTIFIC

THE ROUTING SWITCHER PEOPLE.

2276 So. 2700 W. • Salt Lake City, UT 84119 • Phone 801-973-6840
TWX #910-925-4037

Circle 258 on Reader Service Card

www.americanradiohistory.com

Intercom, 2-way Radio, Telephone, Camera Interphone and Talent IFB.

With a combination like that, why settle for less than ROH quality?

Intercom and modular audio equipment

rOH corporation
3603 Clearview Place, N.E. Atlanta, Georgia 30340 (404) 455-7940

Circle 259 on Reader Service Card

The National Broadcasting Company is now offering exceptional opportunities at its Rockefeller Center headquarters in New York City.

BROADCAST SYSTEMS ENGINEER

Responsible for the design and implementation of network broadcast facilities, the successful candidate will specify, design and supervise the installation and testing of the following:
- *Control rooms, production videotape editing facilities and remote vans.*
- *Electronic news gathering, equipment room and general support facilities.*

Additionally, will be responsible for planning, budgetary control of projects and performance of completed facilities.

Required is a BSEE or equivalent degree and extensive experience in broadcast facilities design and test procedures.

DESIGN DRAFTSMAN

Responsibilities include the design and drafting of consoles, equipment panels and layouts used in broadcast facilities. Specifically, the selected candidate will:
- *Design PC board layouts for broadcast equipment.*
- *Transform electronic and mechanical sketches into finished drawings.*
- *Draft architectural layouts for broadcast facilities.*

Along with extensive experience in electronic, mechanical or architectural drafting, the ideal candidate will have a related college degree or equivalent training.

NBC offers salaries commensurate with experience and a comprehensive benefits package. For prompt consideration, please send resume and salary requirements in confidence to:

Ms. V. Branker/BME
NBC, Suite 1678
30 Rockefeller Plaza
New York, N.Y. 10112

NBC

An equal opportunity employer m/f

EQUIPMENT

view a single channel by switching to manual mode and choosing the desired display. In operation the signal which is to serve as the trigger is connected to channel one. Trigger level is variable.

Adapted Alexander charger 287

Alexander Manufacturing has adapted its Smart Charger to accept E.F. Johnson Series 577, 588, and 590 battery packs. With the addition of special plastic holders, the microprocessor circuitry has the ability to charge six batteries at the same time. Each battery is charged at 400 milli-amps. The holders can be changed at any time, and holders for other makes are available.

Edcor's new wireless microphones 288

Two new lines of wireless mics are available from Edcor, the E Com high band systems, and the PM low band systems. The E Com operates in the 150 to 210 MHz range with switches

www.americanradiohistory.com

for minimizing RF pop. Also offered are phantom power, battery life indicators, and new antennas. High power multiple input transmitters and new diversity circuits have also been added.

The PM low band systems operate on 30 to 50 MHz and have new distortion correcting circuitry, signal strength indicators, and diversity reception.

Rack Mount Mixer from Yamaha 289

Yamaha's new rack-mounted sound mixer, the M406, is a six input, two output (stereo) unit which can also be used as a submixer in a larger, more

complex sound system. The unit has 600 ohm balanced outputs, a three band equalizer, six position input level control, and phantom power for condenser microphones. The stereo program output with left and right master controls can also be used for dual mono.

Extra features are echo/effects send bus with master send control, two effects inputs, and dual VU meters with LED peak indication.

■ FOR MORE INFORMATION ■

circle bold face numbers on reader service card

Audio Recorder from Micro-Trak 290

The Tele-File is a portable recording console with built-in capacity for a cassette recorder. Three audio mixing channels feed into the tape machine and two microphone inputs are supplied. There is also a plug-in battery pack.

This field unit plugs into a telephone to feed back to a station with the reporter providing commentary over the recording. When equipped with earphone along with a microphone, full talkback capability is possible. A 16-button keypad can be ordered and, when used in conjunction with a dual tone generator, the Tele-File can supply remote control of station equipment.

Cue and monitor amplifier from Conex 291

The new Omni-Q is a compact rack-mounted unit suitable for various uses in TV and radio stations. It operates as a remote/network line monitor and buffer amplifier, transmitter input selector and monitor, and automation cue amplifier. Also offered in this device are tape recorder input selector, telephone line source selector, and earphone amplifier.

Compact mixer from Biamp 292

The new 683 is a six-channel rack-mounted mixer that uses, instead of conventional integrated circuits, dis-

crete transistors. All components are mounted on high-grade epoxy-coated PC boards for easy access. Other features include floating and balanced outputs, metering on all outputs, separate reverb control in the monitor, three-band equalization, and ten segment LED output display.

Simpson unveils new VOM 293

The Model 165 is a new pocket-sized VOM with 3½-inch meter and two-color scale. Full measurement is achieved on 22 ranges for ac/dc voltage, dc current, resistance, and on four ranges of dB measurement. Full scale accuracy is ±3 percent dc and ±4 percent ac. Accessories include high-voltage probes, replacement test leads, and carrying cases.

BROADCAST EQUIPMENT SALES MANUFACTURERS REPRESENTATIVE

A major U.S. manufacturer of audio broadcast equipment requires representatives for the New York and Los Angeles areas. Candidates must have solid experience in broadcast equipment sales, be self-motivated and willing to spend some time on the road. Salary, expenses, and commission plus company benefits furnished.

Please reply in confidence

BM/E, Box 100
295 Madison Avenue
New York, NY 10017

CHIEF ENGINEER
BOSTON FM/AM

WHUE has an opportunity for an experienced person with strong audio and transmitter background to take charge of technical operations of its Class B-50 kw FM and 5 kw-DA2 AM Beautiful Music stations.

This is a "hands on" position with plenty of opportunity and many exciting possibilities. If you can keep us the best sounding stations in Boston, you will receive strong management support, an excellent compensation package and the kind of atmosphere you need to do the job right.

Send resume, references, salary history or call A. M. Tanger, President, during business hours at (617) 267-0123.

Beautiful music WHUE 101 FM AM 1150

200 Clarendon Street
Boston, Massachusetts 02116

Equal Opportunity Employer

www.americanradiohistory.com

ADVERTISER'S INDEX

ADDA Corp 1
ADM Technology, Inc ..... Cover 2
A.F. Associates, Inc 125
Agfa-Gevaert 204
Alpha Audio 29
Allen Avionics, Inc 168
Amperex Electronics Corp 109
Ampex-AVSD 137
Ampex-MTD 19
Angenieux Corp of America 167
Anton/Bauer, Inc 92
Aristocart 12
Assca Corp of America 82
Audio Technologies, Inc 224
Auditronics, Inc 70-71, 172, 223
Aurora Imaging Systems 103

Belar Electronics Lab., Inc 212
Beyer Dynamics, Inc 213
Bosch (Fernseh) 193
BPI 143
Broadcast Microwave Services 15, 140
BSM Systems 206

Calvert Electronics 152
Calzone Case 14
Camera Mart, Inc 104-105
Canon USA, Inc 21, 155
Capitol Magnetic Products 26
Ceco Communications 210
Cetec Vega 191
Cine 60, Inc 98
Clear-Com Intercom Systems 111
CMX/Orrox 36
Comex Systems 136
Comprehensive Video Supply Corp 86
Comrex 145
Conrac Corp 57
Continental Electronics Mfg Co 144
Continental Microwave 159
Convergence Corp 97, 216
Crosspoint Latch Corp 129
Countryman Assoc 194

Data Communications Corp 177
Datatek Corp 51
Delta Electronics 201
Digital Services Corp 212
Di-Tech 207
Dolby Laboratories, Inc 113
Dubner Computer Systems 17

Eastman Kodak 49
EEV, Inc 133
EG & G 120
Elector 37
Electro Impulse 194
Electro-Voice 18
Emcee Broadcast Products 142
ESE 134-135
Eventide Clockworks, Inc 28, 161

FOR-A Corp 175
Fortel Inc. 123
Frezzolini Electronics, Inc 111
Fujinon Optical, Inc 119
Fuji Photo Film USA, Inc 173

GCC Communication 223
General Electric Video 214
Gerstensleger 121
Alan Gordon Enterprises, Inc 192
Graham-Patten Systems 206
Gray Engineering Labs 200
Grumman Aerospace 81

Harris Corp 53, 139
Harrison Systems 7
Harris Video 69
Hippotronics 200
Hitachi Denshi American Ltd 156
Hughes Electronic Devices Corp/HEDCO 190

IGM 202
Ikegami Electronics USA, Inc 32, 90-91
Industrial Sciences, Inc 160
Inovonics, Inc 110
International Tapetronics Corp 77

Japan Electronics Show 141
JS JVC Corp 85

Lake Systems Corp. 187
James B. Lansing Sound, Inc 203
Leader Broadcast 176
Leader Instruments 101
Leasametric 148
Listec Television Equip Corp 182
Lowell Light, Inc 99
LPB, Inc 197

3M/Magnetic Tape Div 22-23
3M/Mincom-Video Products 95, 169
Marconi Electronics, Inc 60
Marti Electronics 202
Maxell Corp of America 65
Mayor's Office 208
MCI/Sony 83
MCI/Quantel 63
McMichael, Ltd 114-115
Merlin Engineering 16
Microtime, Inc 73
Microwave Filter Co. 34
Midwest Supply Corp 75
Moseley Assoc. Inc 131
Multidyne Electronics 179
MZB & Assoc. 55

NBC Employment 222
NEC Corp. of America 40, 143

Oki Electronics 188
Orban Associates, Inc 35, 186
Otari Corp 13

Panasonic 107
Panasonic (Ramsa) 8-9
Phelps Dodge Communications Co 163
Philadelphia Resins Corp 25
Philips Test & Measuring Instruments 171
Potomac Instruments 20

Quanta Corp 195
QSI Systems, Inc 164

Ramko Research 5
RCA Broadcast Systems 78-79
ROH Corp 222
Rohde & Schwarz 117
RTS Systems 45

Sachtler Corp 46
Sennheiser 86
Shalico, Inc 216
Sharp Electronics Corp 58-59
Shively Labs 149
Shure Bros., Inc 27
Sigma Electronics 20
Solid State Logic (Musicworks) ..... Cover 3
Sony Broadcast 2-3, 38-39, 126-127, 150-151
Spencer Broadcast 146
Stainless, Inc 93
Stanton Magnetics, Inc 192
Storeel Corp 209
Strand Century 185
Studer Revox America, Inc 24
Surcom Assoc. 215
Swiderski Electronics 215

Tektronix, Inc 11
Telecine, Inc 87
Telemet 218
Television Equipment Assoc 178
Television Technology 172
Telex Communications, Inc 170
Thomson-CSF Broadcast 30-31
Thomson-CSF/DTE 147
Tiffen Filters 33
Time & Frequency Technology 198
TV Graphics 212

Ultimatte Corp 183
UMC Electronics Co 98
UREI 181
Utah Scientific, Inc 221

Varian, Eimac Div 89
Videotek, Inc 42
Viscount Industries Ltd 110

Ward Beck Systems Ltd ..... Cover 4
Winsted Corp 208

Yamaha 67

SALES OFFICES

BM/E

Broadcast Management/Engineering

295 Madison Ave.
New York, New York 10017
Telex: 64-4001
National Sales Manager
James C. Maywalt

Eastern & Midwestern States

295 Madison Avenue
New York, New York 10017
212-685-5320
James C. Maywalt
Ruth A. Windsor

Western States

500 Airport Blvd., Suite 110
Burlingame, CA 94010
415-340-1400
Sandy Fibish

18075 Ventura Blvd., Suite 122
Encino, CA 91316
213-705-4566
Gary A. Hooks

United Kingdom/Europe

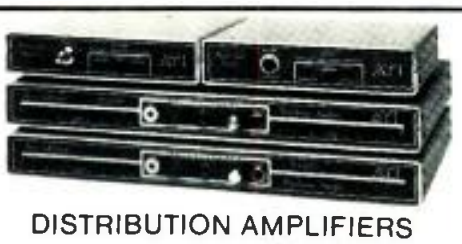
Chiberton House
Doods Road
Reigate, Surrey, England
Telephone, Reigate 43521
Bronwyn Holmes
Derek Hopkins

Japan/Far East

Eiraku Building
1-13-9, Ginza,
Chuo-Ku, Tokyo 104 Japan
03 (562) 4781
S. Yasui
K. Yamamoto

AUDIO PROCESSORS
MODULAR COMPRESSOR - DA

FREE DETAILED BROCHURES



DISTRIBUTION AMPLIFIERS

PHONO
PREAMPLIFIERS

DUAL MIKE,
LINE, & POWER AMPLIFIERS
RACK MOUNTING

MicroAmpSeries by ATI AUDIO TECHNOLOGIES INCORPORATED

328 MAPLE AVENUE
HORSHAM, PA. 19044
(215) 443-0330

Circle 260 on Reader Service Card

www.americanradiohistory.com

BM/E READER SERVICE CARD September 1982 Issue

NAME _____

TITLE _____

STATION OR COMPANY _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE # ( ) _____

Tell us what you like or dislike about the issue

_____

_____

What articles would you like to see?

_____

_____

GREAT IDEA BALLOT: *Circle your favorite solution*

SOLUTION A	SOLUTION B	

100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119
120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139
140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179
180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199
200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219
220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259
260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279
280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299
300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319
320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339
340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359
360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379
380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399

Use until December 31, 1982

BM/E READER SERVICE CARD September 1982 Issue

NAME _____

TITLE _____

STATION OR COMPANY _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE # ( ) _____

Tell us what you like or dislike about the issue

_____

_____

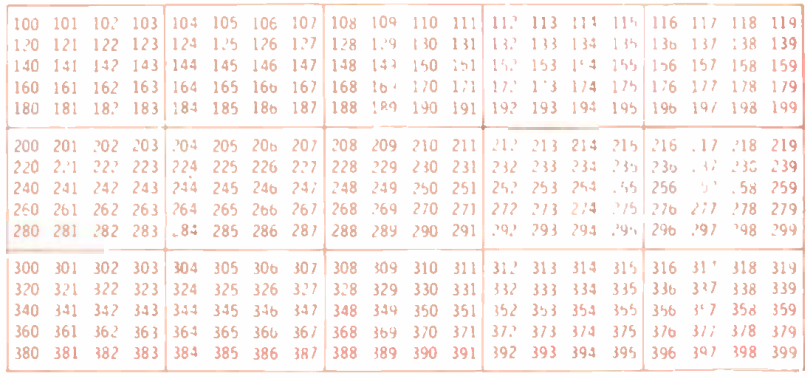
What articles would you like to see?

_____

_____

GREAT IDEA BALLOT: *Circle your favorite solution*

SOLUTION A	SOLUTION B	



Use until December 31, 1982

COMPLIMENTARY SUBSCRIPTION QUALIFICATION CARD

1. I would like to receive BM/E (Broadcast Management/Engineering)
☐ YES ☐ NO

2. Please check your business classifications

☐ AM Station Network Group
☐ FM Station Network Group
☐ TV Station Network Group
☐ Non-broadcast TV
☐ Campus Limited Radio
☐ CATV Facilities
☐ Microwave/Telephone/Satellite Company
☐ Recording Studio
☐ Teleproduction Facility
☐ Government
☐ Consultant
☐ Lawyer
☐ Manufacturer/Distributor/Dealer
☐ Other (please specify) _____

3. Are you responsible for more than one station or facility?
☐ YES ☐ NO

4. My primary area of responsibility is (please check one)

☐ Corporate Management — Board Chairman, President, Owner, Partner, Director and VP or General Manager (other than in charge of engineering or station operations management)

☐ Technical Management & Engineering — VP, Engineering, technical engineering director, chief engineer, engineering supervisor, other engineering or technical titles

☐ Operations & Station Management/Production & Programming — VP operations, operation manager, director, general manager, station manager, production manager, program manager, news director, and other operations titles

5. Signature _____ Date _____

Name _____

Title _____

Station Call Letters or Company _____

Street _____

City _____ State _____ Zip _____

Is this your business address? ☐ YES ☐ NO

If not, please give us your business address below so that we can avoid sending duplicate copies

Name _____

Station Call Letters or Company _____

Street _____

City _____ State _____ Zip _____

www.americanradiohistory.com

Place
Postage
Here

BME
BROADCAST MANAGEMENT ENGINEERING

Broadband Information Services, Inc.
P.O. BOX 6058
Duluth, Minnesota 55806

Place
Postage
Here

BME
BROADCAST MANAGEMENT ENGINEERING

Broadband Information Services, Inc.
P.O. BOX 6058
Duluth, Minnesota 55806

Place
Postage
Here

BME
BROADCAST MANAGEMENT ENGINEERING

Broadband Information Services, Inc.
P. O. BOX 6056
Duluth, Minnesota 55806

www.americanradiohistory.com

Solid State Logic at BBC Maida Vale 4, London

Technology is no substitute for human experience. The complex demands of broadcast audio require resourceful technique and specialised skills which take years to acquire. Engineers of this achievement need and deserve the most advanced, reliable tools available to support their artistry. Which is one of the reasons that major broadcasters and post-production houses specify Solid State Logic.

The SSL 4000E Series Master Studio System and the new SSL 6000E Series Stereo Video System are products of experience. Innovative human engineering provides easy use of the most comprehensive software and hardware control systems ever offered to the audio industry. Unique capabilities such as Total Recall capture inspiration and eliminate drudgery, while the SSL Real Time System and Events Controller bring practical computer assistance to live broadcast, electronic dubbing and video post-production.

Write or call for complete details on Solid State Logic–The choice of experience.

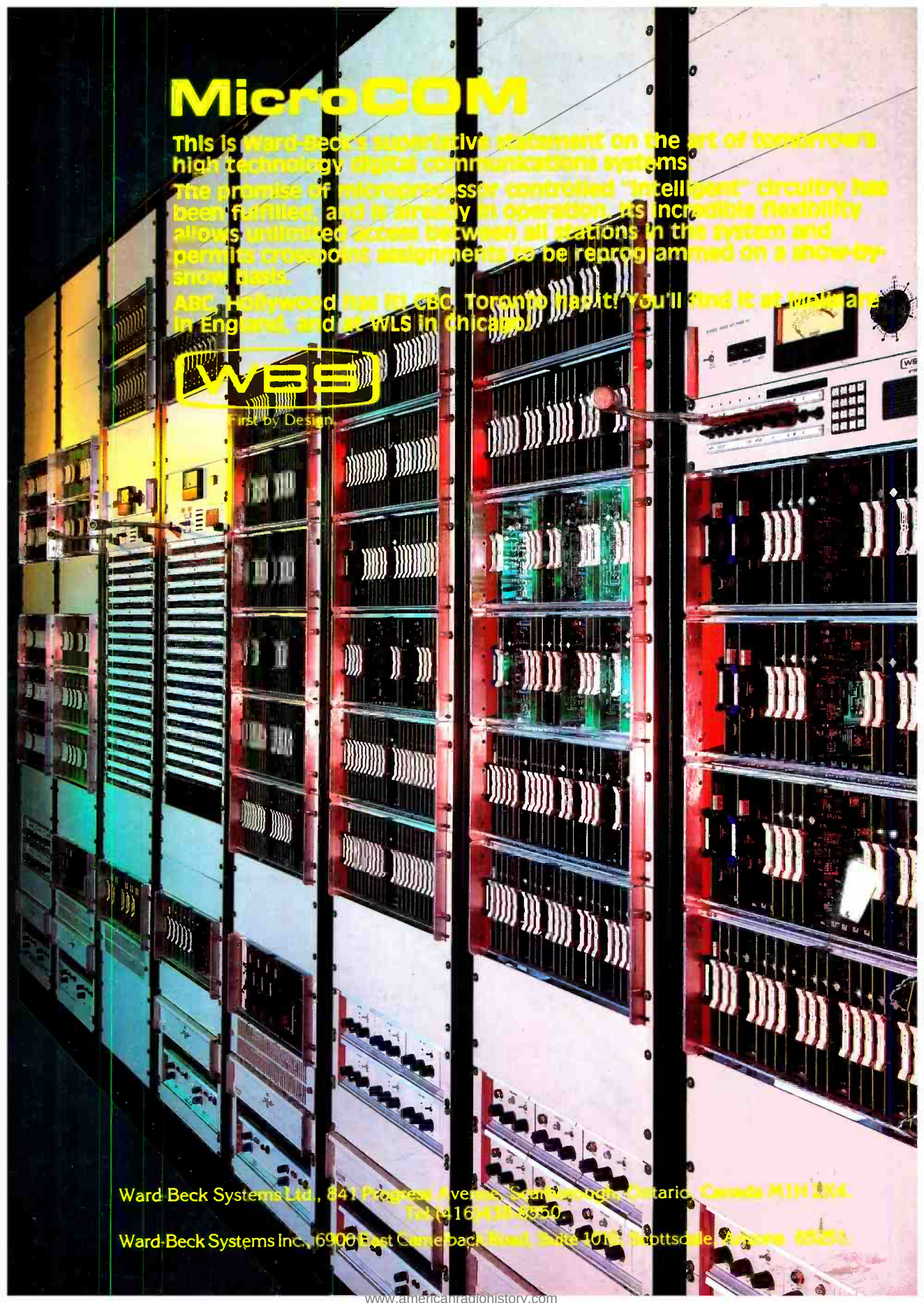
UK & Europe
Solid State Logic
Churchfields, Stonesfield
Oxford, England OX7 2PQ
(099 389) 8282
Telex 837 400

Solid State Logic
Master Studio Systems

North & South America
Musicworks International
2352 Wisconsin Avenue
Washington, D.C. 20007
(202) 333-1500
Telex 440 519

Circle 261 on Reader Service Card

www.americanradiohistory.com


MicroCOM
This is Ward-Beck's superlative statement on the art of tomorrow's high technology digital communications systems.
The promise of microprocessor controlled "intelligent" circuitry has been fulfilled, and is already in operation. Its incredible flexibility allows unlimited access between all stations in the system and permits crosspoint assignments to be reprogrammed on a show-by-show basis.
ABC Hollywood has it. CBC Toronto has it! You'll find it at Thames in England, and at WLS in Chicago.
WBS
First by Design.
Ward Beck Systems Ltd., 841 Progress Avenue, Scarborough, Ontario, Canada M1H 2X4.
Tel: (416) 438-6550.
Ward-Beck Systems Inc., 6900 East Camelback Road, Suite 101, Scottsdale, Arizona 85251.

www.americanradiohistory.com